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RM Winick

1983 REPORT ON COMPREHENSIVE PLANNING POLICIES

ABSTRACT

TITLE: 1983 Report on Comprehensive Planning Policies including guidelines for the administration of the Adequate Public Facilities Ordinance.

AUTHOR: Montgomery County Planning Board of the Maryland-National Capital Park and Planning Commission.

SUBJECT: Adopted Land Use and Staging Policies, Forecasts for Households, Population and Employment, development activity monitoring, and new guidelines for the administration of the Adequate Public Facilities Ordinance.

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ABSTRACT: This document is intended to serve the function of amending the Montgomery County Planning Board's current administrative guidelines for the Adequate Public Facilities Ordinance.

It contains recommendations to the Capital Improvements Program in the areas of transportation and stormwater management as well as recommendations to the Ten Year Comprehensive Water Supply and Sewerage Plan.

As a composite document, it combines a set of interrelated policies and data in one convenient reference volume. These provide an overview of the composite land use and staging policies of the County, especially as they apply to land use regulation.

The report includes revised forecasts for County population and housing, updated inventory data on development progress, and extracts of all previously adopted staging policies as contained in various master plans, sector plans and functional plans.

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THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

The Maryland-National Capital Park and Planning Commission is a bi-county agency created by the General Assembly of Maryland in 1927. The Commission's geographic authority extends to the great majority of Montgomery and Prince George's Counties: the Maryland-Washington Regional District (M-NCPPC planning jurisdiction) comprises 1,001 square miles, while the Metropolitan District (parks) comprises 919 square miles, in the two Counties.

The Commission has three major functions:

- (1) the preparation, adoption, and from time to time amendment or extension of the General Plan for the physical development of the Maryland-Washington Regional District;
- (2) the acquisition, development, operation, and maintenance of a public park system; and
- (3) in Prince George's County only, the operation of the entire County public recreation program.

The Commission operates in each county through a Planning Board appointed by and responsible to the county government. All local plans, recommendations on zoning amendments, administration of subdivision regulations, and general administration of parks are responsibilities of the Planning Boards.

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EXECUTIVE SUMMARY

Introduction

In 1981, the Montgomery County Planning Board adopted its first Annual Comprehensive Planning Policies (CPP) Report. That document dealt with the general subject of comprehensive staging in the County, and incorporated a new set of administrative guidelines for the Planning Board to follow in administering the County's Adequate Public Facilities (APF) Ordinance.

This third annual report revises some of the guidelines adopted in last year's report. Specifically, it raises the thresholds of permitted development in areas of the County to correspond with the increases in programmed transportation capacity adopted by the County Council in its Capital Improvements Program of May 1983.

In addition, the APF guidelines have been amended to clarify the treatment of small subdivisions (under 50 dwelling units or 50 peak hour trips). Small subdivisions will be approved in policy areas where the threshold has not been exceeded without the necessity of local area transportation review. Larger preliminary plans which cannot pass local area transportation review, may be conditionally approved so that development which would produce no more than 49 dwelling units or 49 peak hour trips may proceed to record plat. The remainder of the preliminary plan will not be permitted to record until the applicant can demonstrate that the entire subdivision, including the first 49 trips, can pass the APF test.

The use of transit or para-transit as a means of overcoming the threshold is now explicitly set forth. Such a program must take off the road at least as many car trips as the applicant would generate and it may not double count trip reductions already planned to be accomplished by a prior transit proposal.

These amendments will be monitored to ensure that they accomplish the goals of APF. If necessary, further refinements can be made.

This year's document is intended to serve functions similar to those of last year's report. One is to update the changes in development capacity that are engendered by changes in the Capital Improvements Program, adopted the preceding May, or by other factors, such as changing transit ridership, etc. Another function is to update the County growth forecasts, for which the Board is responsible, on a more regular basis than has been the case in the past. Related to this is a periodic updated report on development projects in the pipeline of permit approval.

The report provides an up-to-date, single reference work that summarizes the current status of all the various adopted or amended master plans, sector plans, functional plans, etc., especially with respect to their cumulative staging implications. By combining all these elements in one document, the public can get a better feel for the relationship between the various elements of past, present, and future that together make up the current composite fabric of comprehensive planning policy for the County.

The main elements of this report are as follows:

Chapter One - Staging

This chapter outlines the method used to calculate the adequacy of transportation facilities for Planning Board administration of the APF Ordinance.

The method involves the identification of "policy areas" within the County, which are organically related to both transportation and drainage-sewer areas. Each policy area is assigned a "threshold" level of development, expressed in both residential and employment terms, which is keyed to the ability of the existing and programmed transportation system to carry it without excessive stress. Subdivisions which add development above this threshold level will be judged to exceed the "adequacy" of the public facilities, and may be refused approval. Provision has been made for both (1) exceeding the threshold under special and unique conditions, and (2) stopping development short of the threshold, if it can be demonstrated that any further development will cause excessive local traffic congestion.

A discussion accompanies each policy area which notes certain residual problems and possible public improvements that could be undertaken to improve the situation. The last item is intended to stimulate further thought and discussion and is not intended to be completely comprehensive or definitive.

Chapter Two - Environment

This chapter contains the outline of a recently completed study to identify areas that require stormwater management planning and a priority ranking of these areas in order to obtain timely capital improvement project staging.

Areas where the Ten Year Water Supply and Sewerage Plan is inconsistent with adopted master plans have been identified and priority categories have proposed to reconcile the differences.

Three County-wide maps have been reproduced to permit a geographic identification of the areas discussed.

Chapter Three - Status

This chapter describes the status of the development pipeline of permit approvals. It is presented for information only, and no further actions are required.

Chapter Four - Forecasts

This chapter contains revised forecasts for population, housing, and employment by planning areas within the County. These forecasts have been revised based upon demographic data obtained from the 1980 Census. The adoption of this document by the Board, after public hearing, will constitute the official action of updating the forecasts.

Chapter Five - Adopted Policies

This chapter contains an extract of all the major staging guidelines of the various adopted master, sector or functional plans. This chapter is for information only and no actions are required.

STAGING

COMPREHENSIVE
PLANNING
POLICIES

GUIDELINES FOR ADMINISTRATION OF THE ADEQUATE PUBLIC FACILITIES ORDINANCE

Introduction

The Montgomery County Subdivision Ordinance authorizes the Planning Board to review all preliminary plans of subdivision for adequacy of programmed public facilities and to reject any that do not conform to this provision of the ordinance.¹ The following guidelines describe the methods and criteria that the Planning Board and its staff will use in administering this activity. These guidelines supersede all previous ones issued by the Board.

The method of administration outlined herein divides the County into policy areas. The Planning Board has determined the maximum amount of development for each policy area which can be accommodated by the existing and programmed public facilities at a particular level of service. These are stated as thresholds. Thresholds are established for dwelling units and employees. As long as a preliminary plan and previously approved development does not exceed the threshold, there is a presumption that public facilities are adequate. However, in order to assure adequate facilities on a small area basis, an additional analysis called Local Area Review may be required. The requirement for this review is triggered by a development which will exceed 50 peak hour trips and which is either near a congested intersection or in a policy area where the total approved development is approaching the threshold. The purpose of Local Area Review is to determine whether the local transportation network is capable of adequately serving the proposed development. These guidelines are not intended to be a means for government to avoid its responsibility for providing Adequate Public Facilities however, alternatives are available for developers who wish to proceed in advance of the public program.

In developing the guidelines outlined herein, the Planning Board has made a preliminary determination that, generally, the existing and programmed facilities, for police stations, fire stations, health clinics, and schools are adequate for the development thresholds outlined below. Similarly, there are no special sewer or water capacity constraints to undercut the service envelopes contained in the current adopted Ten-Year Water and Sewerage Plan. The envelopes have been evaluated and judged consistent with the thresholds outlined below.

In the absence of evidence to indicate a capacity constraint in any of these facilities below the thresholds shown herein, transportation has been found to be the most constraining facility at the present time, and the guidelines have been developed under a methodology that balances development against this constraint. Should other facility elements develop capacity problems, these guidelines will be amended accordingly after proper study, public notice, and public hearings.

Procedures

Within the statutory guidelines for processing preliminary subdivision plans, the following process will be followed. Applications which meet the submission requirements of the Ordinance will be presented by planning department staff as soon as possible to a

¹ §50-35K Montgomery County Code.

meeting of the Subdivision Review Committee. This Committee is composed of staff members representing the various relevant departments and agencies of government. Commentary will be requested from these agencies concerning the preliminary plan application. Planning department staff will incorporate these comments into its own review and prepare a comprehensive staff recommendation. This recommendation will then be placed on the next available regular Planning Board agenda for action by the Board, in accordance with the Board's Rules of Procedure governing subdivision applications.

Criteria

In this document, the County has been divided into a number of policy areas. Each policy area has been assigned a threshold number for both housing and employment, beyond which it is estimated that the capacity of some or all of the available public facilities will have been exceeded. These thresholds are based on a comprehensive evaluation of the combined ability of all the existing and programmed public facilities. In general, these existing and programmed facilities will adequately serve the level of development represented by the threshold numbers. Reflected in these thresholds is an evaluation of the unique characteristics of each policy area with respect to such elements as relative degrees of transit service, through traffic, etc. From time to time, these thresholds will be amended by the Planning Board, after public hearing, to reflect changing conditions such as additions to the Capital Improvements Program, changing patterns of public facility usage, revised levels of public service, etc.

In Chapter IV on Forecasts, the third round of the cooperative forecasting process was described. Due to the timing of those revisions relative to the timing of the threshold analysis, those new cooperative forecasts have not yet been used as a criteria in preparing the amended thresholds. The regional small area forecasts are scheduled to be available by the end of the year, therefore, they will be used in preparing the threshold amendment for new year.

The following map (Map 1, page 11) combines policy areas into groups and indicates acceptable levels of service for each grouping. The policy area group has similar public transit service. A "full service" area has frequent Metro, concentrated feeder and community bus, kiss-'n'-ride and easier walk access. "Frequent" transit service areas have some Metro, regional bus, feeder bus, kiss-'n'-ride, and community bus. An area designated as "moderate" has regional bus and/or commuter rail access as well as limited Metrorail park-'n'-ride and feeder bus. "Limited" areas have regional bus and/or commuter rail access as well as park-'n'-ride.

Threshold Interpretation

Planning staff will maintain records of: (1) the total amount of development that actually exists in each policy area expressed in terms of dwelling units and employees; and (2) the amount that would be added to this if all outstanding preliminary plans which have been approved by the Planning Board and which also have received sewer authorization approval from the Washington Suburban Sanitary Commission were also in place. This total will be used as a base, to which during staff evaluation the amount of development that would be generated by each new preliminary plan application will be added. If the combined total does not exceed the threshold of the Comprehensive Staging Policy Guideline, the application will be given a presumption that it meets the adequate public facilities test.

It is recognized that all sewer authorizations will not result in construction. An approved preliminary plan generally obtains a sewer authorization within four months of its initial approval. Historically, 70 percent of approved preliminary plans proceed to record plat. The remaining plans expire and must be resubmitted as preliminary plans if they wish to develop. Sewer authorizations no longer have a constraint on the volume of capacity authorized. The major expenses involved in maintaining an authorization are now deferred to a point much closer to actual building permit. The life of a sewer authorization is now keyed to the life of a preliminary plan. These factors make it possible to stock pile an authorization far in advance of development. Discounting the list of sewer authorizations is a means of bringing the total amount of development more in line with development which will actually occur within the time frame of adopted Capital Improvements Programs.

Staff will use the following criteria for dwelling units to determine the amount of planned development which can be "discounted." Authorizations which are more than seven years old shall be discounted by 90 percent of their remaining authorization. (This corresponds to the decrease historically experienced when these older record plats apply for a new subdivision.) Authorizations for apartments which exceed the staff's six year forecast will be discounted. (The outlook for apartments is uncertain but the risk of the forecast being exceeded within the six month period at which time the discount will be reviewed is minimal.) Non-apartment authorization will be discounted to the extent to which they exceed 300 units per authorization. (Large developers average 50 units a year per subdivision. During the six year time frame of the CIP, the large developer will build an average of 300 units.)

Staff will use the following criteria to determine non-residential discounts. Sewer authorizations which propose speculative office construction will be identified. With the assistance of the County Office of Economic Development, the staff will isolate from that list those projects which have not taken any steps to proceed through the development process other than sewer authorization, have not obtained financing, and have not risen to the level of notice in published list of anticipated development. Those projects which meet these criteria will be totaled as a discount for each area.

The discount will be calculated and will remain constant for six months or until building permits for apartments exceed fifty percent of the six year forecast. The discount procedure and assumptions will be reexamined by the Planning Board, either when warranted by building permits or at the expiration of six months from the date of adoption, which ever is sooner.

The discount comes into use when the threshold has been reached in a policy area. The discount permits planned development to be approved in excess of the threshold up to the amount of the discount. Where the development pipeline already exceeds the threshold by more than the discount, the discount will be of no effect. In order to avoid large developers from being the sole user of discounts, residential plans which are over the threshold will not be permitted to take advantage of the discount for more than 75 dwelling units per parcel of land at one location. (Definition of "parcel of land at one location" will be identical to the definition found in the local area transportation review section for determining the existence of 50 trips.) There is no limitation on the amount of the discount available per plan for employment. Each time the discount is invoked in order to approve a plan, the discount will be lowered by the amount the plan exceeded the threshold.

To illustrate the operation of the discount policy, the Fairland/White Oak Area will be used. In September 1983, the pipeline (development with preliminary plan and sewer authorization approval plus units completed since 1977) stood at 11,295 units. The proposed residential threshold is 11,000. If there were no discount policy, all future preliminary plan applications in the area would be over the threshold. A total of 3,815 units are in excess of 300 per development or in multi-family units which exceed the forecast. These units are to be "discounted" from the pipeline. When the discounted units are subtracted from the pipeline, the discounted pipeline become 7,480. This discounted pipeline is 3,520 units below the threshold. Therefore on the basis of the threshold analysis another 3,520 units could be approved but each applicant could only use 75 units.

A preliminary plan for more than 49 dwelling units or 49 peak hour trips in an area where the discount exceeds the pipeline of development in excess of the threshold, will be required to pass local area transportation review for approval. If such a plan is unable to pass local area review it may be conditionally approved such that the development which may proceed to record plat will produce less than 50 dwelling units or 50 peak hour trips. When the applicant can demonstrate that the full plan as submitted, including those lots which have been approved for recording, has adequate public facilities for all facilities, then the remainder of the preliminary plan will be able to obtain record plat approval. Plans of less than 50 dwelling units or 50 peak hour trips may be approved without any local area review in areas where a discount is available. Further subdivisions on such parcels which would bring the total units or peak hour trips in excess of 49 trips will be treated as if the entire proposal, as determined by reference to the original tract, had been submitted as one preliminary plan.

In cases where the planning staff believes that, notwithstanding the presumption of adequacy given to plans which meet the threshold test, there may be created a serious local public facility overload, staff shall undertake a more detailed local area review. If the result of this review is to demonstrate that this will indeed result in a serious local problem which cannot be resolved within the context of the existing public facility network and the adopted Capital Improvements Program, staff shall recommend denial of the project to the Planning Board. Applicants will be advised if such a local review is undertaken, and will be required to provide additional analytical background such as traffic studies, to assist staff to complete this analysis within the statutory time frame.

Threshold Flexibility

In some cases it may be in the public interest for the staff to recommend, and/or the Board to grant approval to a preliminary plan application that exceeds the threshold. Caution should be exercised in allowing the threshold to be exceeded. In general, such approval above the threshold will be conditioned upon the future construction, by either the applicant and/or the government, of some public facility projects or the operation of a transit program which, if added to the approved Capital Improvements Program (CIP) as a programmed facility, will add capacity to the road network and result in the subdivision meeting the adequacy tests of local area review. Usually, the nature and design of the additional project or program will need to receive prior approval from the planning staff and from the relevant governmental agency responsible for constructing and maintaining such facilities or programs.

Where the applicant commits to provide a transit, para-transit or ridesharing program, such applicant may be deemed to have passed the threshold test if the Board finds that the program will reduce the number of peak hour automobile trips by at least as

many trips as would be generated by the proposed development. After a preliminary plan has been approved on this basis, later applicants may be credited for reduced trips only to the extent that the new proposal will provide additional reductions sufficient to accommodate trips generated by the proposed subdivision.

In cases where the applicant agrees to pay for the facility, there will normally be no limit on the size or extent of the project, subject to its being in accordance with an adopted Master Plan or other relevant policy statement. In cases where the approval is conditioned on the government adding some facility projects to the CIP, the Board and staff will be guided by such judgements as: how probable the addition of such projects may be; how large and expensive the projects are; how long they may take to implement; and other similar considerations. In general, this latter type of conditional approval will be limited to situations in which the additional public facility projects are relatively small and easily achieved.

Specific Standards

To better interpret the general provisions described in the Adequate Public Facilities Ordinance itself, the following administrative standards will be observed.

(1) Capital Improvements Program Definition

A public facility project is considered "programmed" and thus counted as an available public facility capacity if it is scheduled for at least 50 percent of its total construction cost to be expended within the six-year period of the adopted CIP. Where such a road project either crosses several policy areas or will be built over a period of time in identifiable segments, the Planning Board may include only those segments which will be completed or started within six years. Staff may request construction schedules from the agency undertaking major projects which meet the above criteria and transmit its findings to the Board.

(2) Roads, Street Access, and Public Transportation

In those policy areas which have not been assigned a specific threshold figure, applications will be reviewed under a transportation standard of not exceeding level of service D at the nearest critical intersection, as per Section 4 of the Local Area Transportation Review Guidelines.

In those policy areas which have been assigned a specific threshold figure, no local area review will be undertaken if the total development, as defined above, does not exceed the threshold, and if the subdivision application generates less than 50 vehicle trips during peak hours. If the application generates more than 50 peak hour trips, it will be evaluated under a separate set of criteria, called Guidelines for Local Area Transportation Review.² The basic procedural elements of these guidelines are shown on Chart 9.

(3) Sewerage and Water Service

In accordance with the language of the Adequate Public Facilities Ordinance itself, in both policy areas with a threshold and those without one, applications will be considered

² See Local Area Transportation Review following this section.

adequately served by sewerage and water if the subdivision is located in an area in which water and sewer service is presently available, under construction, is designated by the County Council for extension of service within the first two years of a current approved Ten Year Water and Sewerage Plan, or, if the applicant either provides a community water and/or sewerage system, or meets health requirements for septic and/or well system, as outlined in the Adequate Public Facilities Ordinance. These requirements are determined either by reference to the Council adopted Ten-Year Water and Sewerage Plan, or by obtaining a satisfactory percolation test from the County Health Department. Applications will only be accepted for further planning staff and Board consideration if they present evidence of meeting the appropriate requirement.

(4) General Health, Safety, and Welfare

If an application does not generate development such as to exceed a threshold, or if it is located in a policy area where no threshold has been designated, planning staff will consider the programmed services to be adequate for facilities such as police stations, firehouses, health clinics, and schools unless there is evidence to believe that a local area problem will be generated. Such a problem is one which cannot be overcome within the context of the adopted Capital Improvements Program and Operating Budgets of the relevant agencies. Where such evidence exists, either through agency response to the Subdivision Review Committee clearinghouse or through public commentary or planning staff consideration, a local area review shall be undertaken. Such review shall seek a written opinion from the relevant agency and will require, if necessary, additional data from the applicant in order to facilitate the completion of the planning staff recommendation within the statutory time frame for Planning Board action.

(5) General Policy Considerations

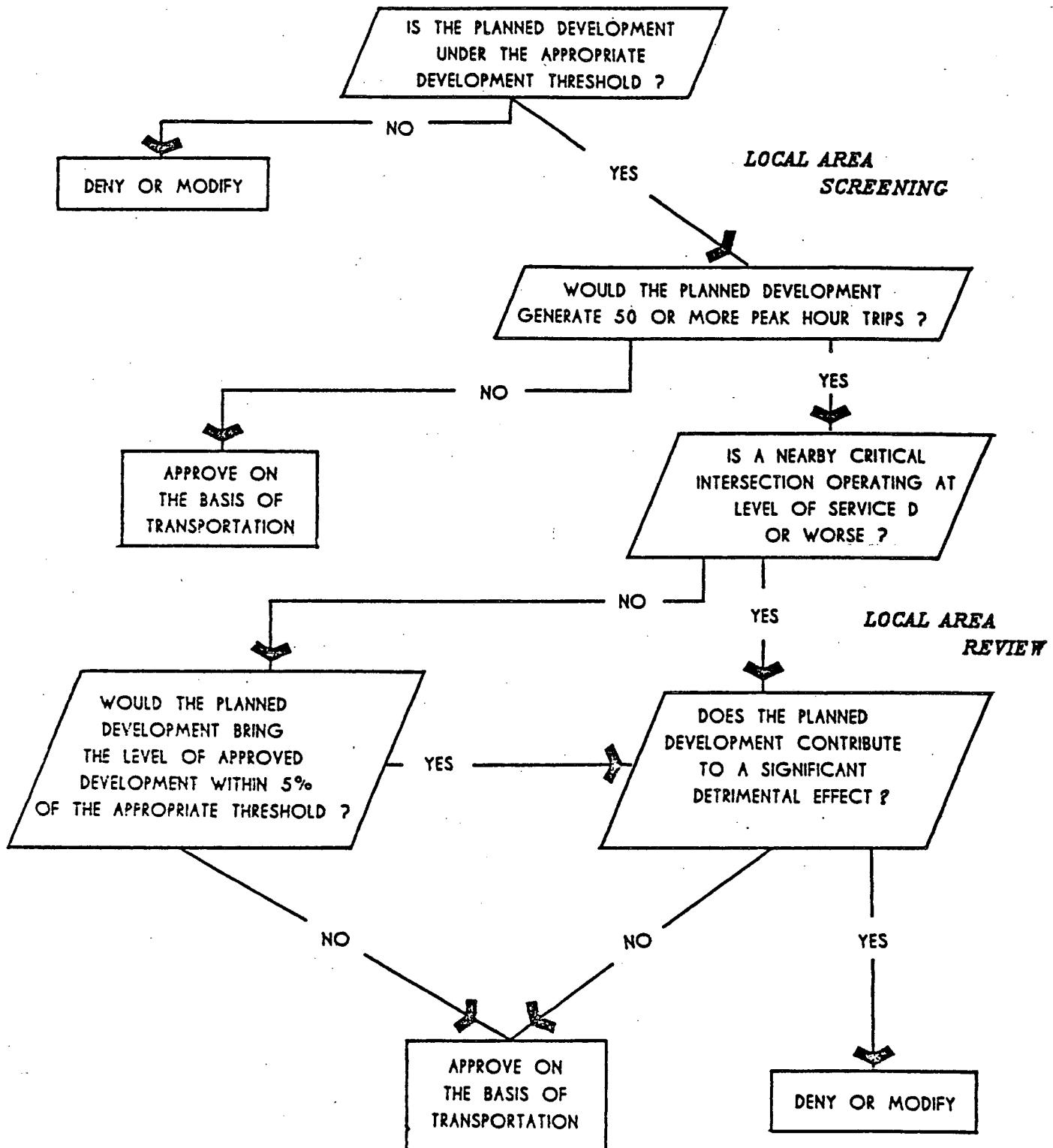
In cases where the application generates development in excess of the threshold, and the planning staff and/or Board are willing to consider a possible approval conditioned upon some future additions to the Capital Improvements Program, or some additional program to increase capacity, the planning staff may undertake special studies to assist in making such a judgement involving such aspects as fiscal impact, housing price, unique character, etc. In such cases, staff will require, if necessary, additional data from the applicant in order to facilitate the evaluation.

Revision Process

These Administrative Guidelines will remain in effect until amended after public hearing by a formal vote of the Planning Board. It is expected that the next revision to these guidelines will be prepared in the fall of 1984 for public hearing, and adoption by January 1, 1985.

To assist general public understanding of the methodologies and criteria used in this process, the Board will continue to appoint a Citizens Technical Advisory Committee (CTAC). The CTAC will be composed of County citizen representatives of a broad spectrum of County interests, together with ex-officio members from appropriate County and State agencies. The committee will be asked to review the staff draft 1984 CPP and other matters related to the administration of the Adequate Public Facilities Ordinance as requested by the Board. The committee will be invited to share its comments and ideas with the Planning Board prior to the Board approving an amended version of this document for general release to the public in the fall of 1984.

STANDARD APPROVAL PROCEDURE FOR TRANSPORTATION ADEQUACY



DEFINITIONS

POTENTIAL FURTHER TRANSPORTATION IMPROVEMENTS

Facilities which if included as Programmed Facilities have the potential of increasing the development threshold while maintaining an acceptable level of service.

The list of such improvements is not necessarily complete. Alternative improvements or other independent projects, as yet undefined, may also be capable of adding transportation capacity.

LOCAL AREA REVIEW

The process used to determine if the proposed development will produce excessive local detrimental impact beyond the capacity of existing and programmed public facilities. (See detailed guidelines attached.)

PROGRAMMED FACILITY

A capital facility project which is contained within the approved Six Year Capital Improvements Program of an appropriate agency, such that at least half of the funds necessary for construction or operation are scheduled for expenditure within the six-year time frame. Where such road project either crosses several policy areas or will be built over a period of time in identifiable segments, only those sections identified by the Planning Board will be deemed "programmed."

SEWER AUTHORIZATION/PIPELINE

An approval by the Washington Suburban Sanitary Commission to provide sewer service to a proposed development under certain conditions, primarily related to engineering standards and administrative fees. In monitoring those authorizations, planning staff will use the Sanitary Commission's files, with periodic updating. Sewer authorizations are an indication of the development pipeline. "Sewer Authorization Pipeline" refers to sewer authorizations plus completed development since 1977.

STAGING POLICY AREA

A geographic subarea of the county, delineated by the Planning Board, for the purpose of staging analysis and the establishment of threshold capacities as appropriate. (See Map 1, page 11).

THRESHOLD

A total amount of development expressed in terms of dwelling units and/or employees that has been determined by the Planning Board to be balanced appropriately, on the basis of an area wide average, with the existing and programmed facilities for the area.

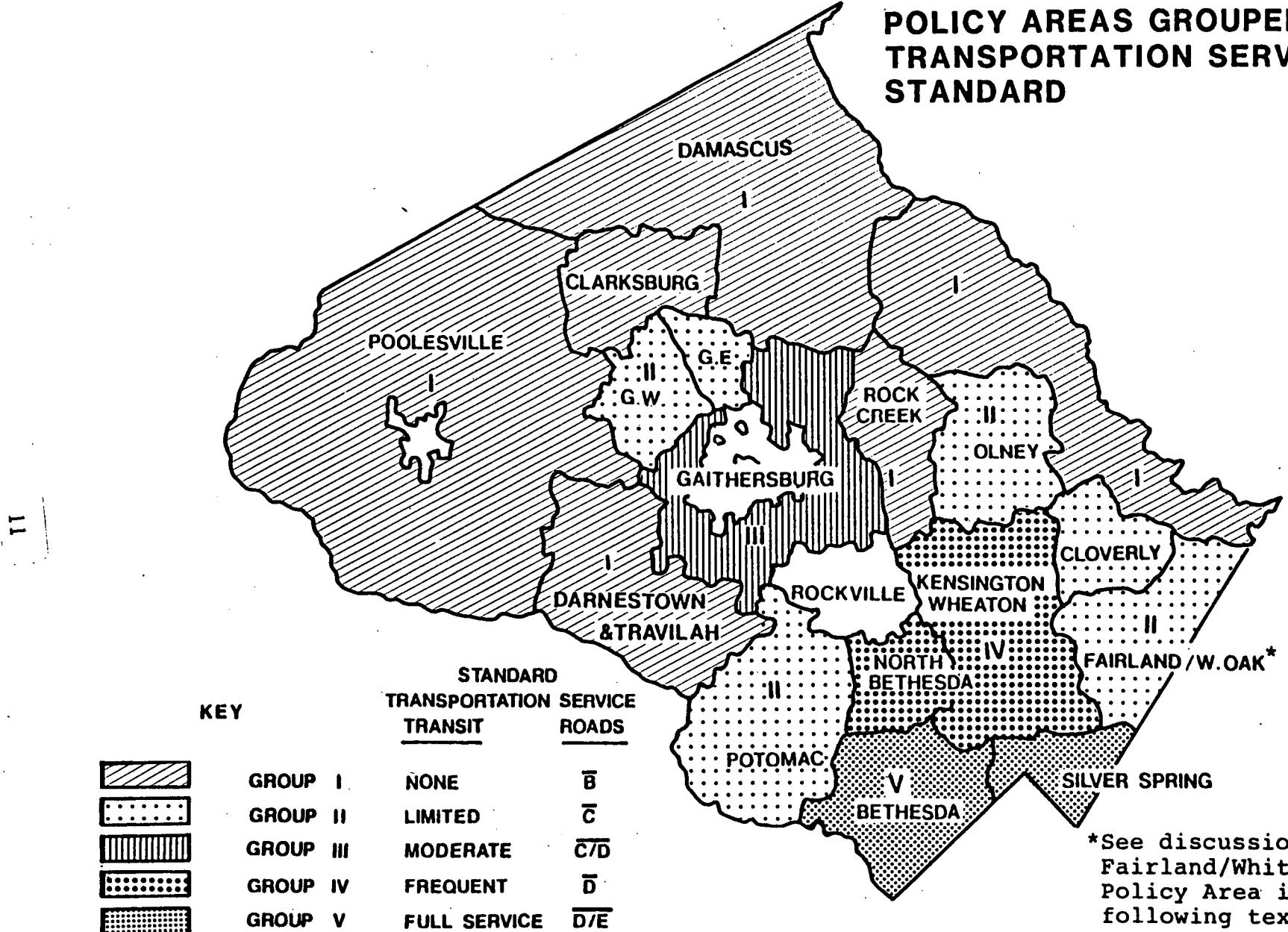
Dwelling units may be single family detached, townhouses, garden apartments, and high rises. Each dwelling unit is counted as one unit.

The number of employees produced by development is estimated on the basis of the floor area and intended use of the planned structures. Unless the development is unique in some manner, statistical averages are used for the four major land use categories: office (200 square feet per employee) retail (400 square feet per employee) industrial (450 square feet per employee), and "other" (500 square feet per employee).

POLICY AREA RELATIONSHIP TO PLANNING AREAS

Olney	Includes the southern portion of the Olney Planning Area, the northern border defined by Brookville Road and Brighton Dam Road. Transfer of Development Rights (TDR) sending areas are located north of the policy area.
Germantown West	Identical to that portion of the Germantown Planning Area which lies west of I-270.
Germantown East	Identical to that portion of the Germantown Planning Area which lies east of I-270.
Cloverly	Identical to the portion of the Eastern Montgomery County Master Plan defined as Cloverly; northern border is defined by Ednor Road and Spencerville Road.
Potomac	Includes all of the Potomac Master Plan area, plus a small suburbanized part of Travilah, south of Glen Mill Road and north of the Potomac Electric Power Company right-of-way.
Fairland/White Oak	Identical to the Fairland/White Oak Planning Areas.
Gaithersburg	Includes all of the Gaithersburg and Gaithersburg Vicinity Planning Areas, plus the area bordered by Muncaster Mill Road, Rock Creek Park and the northern border of Rockville; also includes the area immediately south of Route 28, designated for R-200 zoning in the Potomac Subregional Master Plan.
North Bethesda	Identical to the North Bethesda Planning Area.
Kesington/Wheaton	Includes all of the Kesington and Wheaton Planning Areas, plus that portion of the Kemp Mill/Four Corners Planning Area which lies north of the Beltway (I-495).
Bethesda	Identical to the Bethesda Planning Area.
Silver Spring/Takoma Park	Includes all of the Silver Spring and Takoma Park Planning Areas, plus that portion of the Kemp Mill/Four Corners Planning Areas which lies south of the Beltway (I-495).

POLICY AREAS GROUPED BY TRANSPORTATION SERVICE STANDARD



SOURCE: M-NCPPC

TABLE I
1984 STAGING THRESHOLDS^{1/}
BASE YEAR 1977

Policy Area and Traffic Shed	Residential ^{2/} Threshold			Employee ^{2/} Threshold					
GROUP I POLICY AREAS									
Rock Creek	Staging determined by level of service D at nearest intersection or for other policy considerations.								
Damascus									
Poolesville									
Clarksburg									
Travilah/Darnestown									
	Adopted ^{3/} 1983 Thresholds	Proposed 1984 Thresholds	Difference between 1984 & 1983	Adopted ^{3/} 1983 Thresholds	Proposed 1984 Thresholds	Difference between 1984 & 1983			
GROUP II POLICY AREAS									
Olney	4,500	5,000	500	3,000	4,000	1,000			
Germantown West	3,000	3,000	0	1,000	1,000	0			
Germantown East	1,000	1,000	0	3,500	3,500	0			
Cloverly	500	500	0	500	500	0			
Potomac	6,300	6,300	0	3,200	3,200	0			
Fairland/White Oak	8,000	11,000	3,000	14,000	15,000	1,000			
GROUP III POLICY AREAS									
Gaithersburg	17,500	22,000	4,500	37,000	46,500	9,500			
GROUP IV POLICY AREAS									
North Bethesda	7,000	7,000	0	29,000	29,000	0			
Kensington/Wheaton	10,000	11,000	1,000	9,000	10,000	1,000			
GROUP V POLICY AREAS									
Bethesda ^{4/}	5,000	6,000	1,000	19,000 ^{4/}	21,000	2,000			
Silver Spring/Takoma Park ⁵	8,000	4,000	-4,000	18,000	14,000	-4,000			
COUNTY TOTAL⁶	70,800	76,800	6,000	137,200	147,700	10,500			

- 1/ Thresholds for 1984 are derived from the Capital Improvements Program approved in May 1983, and are expected to remain in force roughly between December 1983 and December 1984.
- 2/ Residential thresholds are measured in terms of numbers of dwelling units. Employee thresholds are measured in terms of number of jobs. Employment estimates are derived from submitted applications by Planning Board staff, based upon the proposed use and square footage of new structures.
- 3/ Allowable number of employees and residential units above the 1977 base period as determined by the adequacy of (1) existing transportation facilities, plus (2) transportation projects which are programmed for 50% of construction in the current Montgomery County CIP and the Maryland Department of Transportation's Consolidated Six Year Transportation Program.
- 4/ The staging elements of the adopted Bethesda CBD Sector Plan are adopted as part of this Comprehensive Staging Policy and are incorporated herein by reference. The limitations of the Bethesda CBD Sector Plan take precedence over the threshold established for the Bethesda Policy Area in this document.
- 5/ See Page 36 for explanation of reduced threshold.
- 6/ The City of Rockville is excluded as a policy area and from this County total. However, the traffic generated from existing and future development in Rockville is accounted for in calculating these thresholds.

SOURCE: Montgomery County Planning Board, Research Division.

1/1/78-
12/31/84 Sewer
Housing Authorizations Pipeline
Completions As of 8/15/84 Total

GROUP II POLICY AREAS	11,988	30,857	42,845
OLNEY	1,230	2,751	3,981
GERMANTOWN WEST	4,041	11,804	15,845
GERMANTOWN EAST	607	2,418	3,025
CLOVERLY	777	1,715	2,492
POTOMAC	2,064	2,305	4,369
FAIRLAND/WHITE OAK	3,269	9,864	13,133
GROUP III POLICY AREAS	9,216	15,138	24,354
GAITHERSBURG	9,216	15,138	24,354
GROUP IV POLICY AREAS	4,496	8,386	12,882
NORTH BETHESDA	1,203	2,694	3,897
KENSINGTON/WHEATON	3,293	5,692	8,985
GROUP V POLICY AREAS	2,339	1,633	3,972
BETHESDA	1,670	1,218	2,888
SILVER SPRING/TAKOMA PARK	669	415	1,084
TOTAL	28,039	56,014	84,053

September 14, 1984

CURRENT NET REMAINING CAPACITY UNDER 1984 THRESHOLDS
(WITHOUT CONSIDERATION OF DISCOUNT POLICY)

Dwelling Unit Threshold	Residential				Employees			
	Pipeline: Completions*1 Since 1977		Threshold*2 Minus Plus Out-	Additional*3 Permitted (Positive Values Column 3)	Pipeline: Employees*1 Since 1977		Threshold*2 Minus Plus Out-	Additional*3 Employees (Positive Values Column 8)
	Dwelling standing	Sewer Authorization	Minus Column*2	In Column 3)	Employees Threshold	Sewer Authorization	Minus Column7)	In Column 8)
GROUP II POLICY AREAS	26,800	42,845	(16,045)	0	27,200	26,938	262	262
OLNEY	5,000	3,981	1,019	1,019	4,000	1,289	2,711	2,711
GERMANTOWN WEST*4	3,000	15,845	(12,845)	0	1,000	7,473	(6,473)	0
GERMANTOWN EAST	1,000	3,025	(2,025)	0	3,500	2,192	1,308	1,308
CLOVERLY	500	2,492	(1,992)	0	500	63	437	437
POTOMAC*5	6,300	4,369	1,931	1,931	3,200	3,200	0	0
FAIRLAND/WHITE OAK	11,000	13,133	(2,133)	0	15,000	12,721	2,279	2,279
GROUP III POLICY AREAS	22,000	24,354	(2,354)	0	46,500	27,614	18,886	18,886
GAITHERSBURG	22,000	24,354	(2,354)	0	46,500	27,614	18,886	18,886
GROUP IV POLICY AREAS	18,000	12,882	5,118	5,118	32,946	33,208	(262)	0
NORTH BETHESDA	7,000	3,897	3,103	3,103	29,000	28,704	296	296
KENSINGTON/WHEATON	11,000	8,985	2,015	2,015	3,946	4,504	(558)	0
GROUP V POLICY AREAS	10,000	3,972	6,028	6,028	35,000	18,171	16,829	16,829
BETHESDA*6	6,000	2,888	3,112	3,112	21,000	14,617	6,383	6,383
SILVER SPRING/TAKOMA PARK	4,000	1,084	2,916	2,916	14,000	3,554	10,446	10,446
TOTAL	76,800	84,053	N.A.		141,646	91,046	N.A.	0

*1 Completions through January 1, 1984, sewer authorizations as of September 1984. These numbers are subject to periodic change.

*2 A positive number indicates existing and proposed developments totaling less than threshold capacity. A negative number indicates threshold capacity has been exceeded.

*3 Threshold minus pipeline. Any or all of these numbers may be lower because of the effect of local area transportation review. Where Column 3 or 9 is a negative number, additional units permitted is reported as zero.

*4 Threshold does not include capacity added by developer sponsored road improvements.

*5 Threshold capacity equal with the zoning envelope.

*6 The Bethesda CBD Sector Plan supersedes the threshold established for the Bethesda Policy Area.

SOURCE: Montgomery County Planning Board, Research Division.

9/14/84

TABLE 2
CURRENT NET REMAINING CAPACITY UNDER 1984 THRESHOLDS
(WITHOUT CONSIDERATION OF DISCOUNT POLICY)

Dwelling Unit Threshold	Residential			Employees			
	Pipeline: Completions Since 1977	Threshold ^{2/} Minus Pipeline (Column 1 Minus Column 2)	Additional ^{3/} Units Permitted (Positive Values In Column 3)	Employees Threshold	Pipeline: Employees Since 1977	Threshold ^{2/} Minus Pipeline (Column 6 Minus Column 7)	Additional ^{3/} Employees Permitted (Positive Values In Column 8)
GROUP II POLICY AREAS							
Olney	5,000	2,613	2,387	4,000	1,274	2,726	2,726
Germantown West ^{4/}	3,000	14,651	-11,651	0	1,000	6,857	-5,857
Germantown East	1,000	2,718	-1,718	0	3,500	1,929	1,571
Cloverly ^{5/}	500	2,428	-1,928	0	500	63	437
Potomac	6,300	3,976	2,324	2,324	3,200	3,200	0
Fairland/White Oak	11,000	11,295	-295	0	15,000	11,839	3,161
GROUP III POLICY AREA							
Gaithersburg	22,000	19,185	2,811	2,811	46,500	25,367	21,133
GROUP IV POLICY AREAS							
North Bethesda	7,000	3,801	3,199	3,199	29,000	22,535	6,465
Kensington/Wheaton	11,000	7,054	3,946	3,946	10,000	4,247	5,753
GROUP V POLICY AREAS							
Bethesda ^{6/}	6,000	2,751	3,249	3,249	21,000	13,686	7,314
Silver Spring/Takoma Park	4,000	960	3,040	3,040	14,000	2,958	11,042
TOTAL	76,800	71,436	N.A.	18,632	147,700	93,955	N.A.
							59,802

^{1/} Completions through January 1, 1981, sewer authorizations as of September 1983. These numbers are subject to periodic change.

^{2/} A positive number indicates existing and proposed developments totaling less than threshold capacity. A negative number indicates threshold capacity has been exceeded.

^{3/} Threshold minus pipeline. Any or all of these numbers may be lower because of the effect of local area transportation review. Where Column 3 or 9 is a negative number, additional units permitted is reported as zero.

^{4/} Threshold does not include capacity added by developer sponsored road improvements.

^{5/} Threshold capacity equal with the zoning envelope.

^{6/} The Bethesda CBD Sector Plan supersedes the threshold established for the Bethesda Policy Area.

SOURCE: Montgomery County Planning Board, Research Division.

TABLE 3
EFFECT OF PIPELINE DISCOUNT POLICY^{1/}

	Residential			Employees		
	(1)	(2)	(3) Available Threshold With Discounted Pipeline (Positive Values of Col. 2 Plus Column 2)	(4)	(5)	(6) Available Threshold With Discounted Pipeline (Positive Values of Col. 4 Plus Column 5)
	Threshold ^{2/} Minus Pipeline	Raw Dwelling Unit Discount		Threshold ^{4/} Minus Pipeline	Raw Employee Discount	
<u>GROUP II POLICY AREAS</u>						
Olney	2,387	143	N.A.	2,726	0	N.A.
Germantown West	-11,651	7,060	0	-5,857	2,540	0
Germantown East	-1,718	1,012	0	1,571	1,460	N.A.
Cloverly	1,928	558	0	437	0	N.A.
Potomac	2,324	89	N.A.	0	0	0
Fairland/White Oak	-295	3,815	3,520	3,161	820	N.A.
<u>GROUP III POLICY AREA</u>						
Gaithersburg	2,811	1,390	N.A.	21,133	1,450	N.A.
<u>GROUP IV POLICY AREAS</u>						
North Bethesda	3,199	313	N.A.	6,665	4,450	N.A.
Kensington/Wheaton	3,946	712	N.A.	5,753	0	N.A.
<u>GROUP V POLICY AREAS</u>						
Bethesda	3,249	167	N.A.	7,314	2,730	N.A.
Silver Spring/Takoma Park	3,040	5	N.A.	11,042	0	N.A.

^{1/} These APF guidelines prescribe a discounting of sewer authorizations (see previous page). This discount comes into play only where the pipeline exceeds or is about to exceed the threshold and where the amount of the discount (Column 2 and 5) is greater than the aforementioned excesses (Column 1 and 4).

^{2/} A positive number reflects remaining capacity under threshold capacity. A negative number indicates threshold capacity has been exceeded by existing and planned development.

^{3/} Where the threshold minus the pipeline is greater than the raw discount, the discount policy has no practical effect. Where this situation exists an "N.A." (Not Applicable) is reported in this column. Restriction on the use of capacity made available by the discount is contained in these guidelines (see previous page).

SOURCE: Montgomery County Planning Board, Research Division.

TABLE 4

**ROAD PROJECTS ADDED BY THE ADOPTED 1984-89 CIP
AND THE MdDOT/SHA 1984-89 CONSOLIDATED TRANSPORTATION PROGRAM**

Policy Area	Roadway	State or County	Limits
<u>Olney</u>	MD 97 (Georgia Avenue)	S/C	MD 28 (Norbeck Road to south of MD 108 intersection)
<u>Fairland/ White Oak</u>	US 29 (Columbia Pike)	C	Fairland Road to Greencastle Road
<u>Gaithersburg</u>	I-370 (Metro Connector)	S	I-270 to Shady Grove Metro Station
	Muddy Branch Road ¹	C	Intersection with MD 28 (Darnestown Road)
	Shady Grove Road	C	MD 28 (Darnestown Road) to I-270
<u>Rockville</u>	I-270 Interchange	S	At MD 189 (Great Falls Road)
<u>Kensington/ Wheaton</u>	MD 182 (Layhill Road)	S	MD 97 (Georgia Avenue) to Argyle Club Road
<u>Bethesda</u>	I-495 (Capital Beltway)	S	West of I-270 to west of MD 97 (Georgia Avenue)
<u>Silver Spring/ Takoma Park</u>	I-495 (Capital Beltway)	S	West of I-270 to west of MD 97 (Georgia Avenue)

¹ Programmed intersection improvement to be used in Local Area Transportation Reviews, but is not being used in preparing the threshold update.

READING STAGING CHARTS

Total dwelling units and employees are indicated on vertical axis. The ceiling, threshold and pipeline numbers at the bottom of the charts use 1977 as their base year. Add the ceiling, threshold and pipeline numbers to the 1977 base to obtain the position of the appropriate line on the staging chart.

Net remaining capacity is calculated by subtracting the pipeline from the threshold. Where the pipeline already exceeds the threshold, the net remaining capacity is zero.

The shaded area on the chart represents the range between the high and low forecast.

OLNEY

Existing Conditions

Transit Availability: The Olney area is currently served by regional bus lines on Georgia Avenue, New Hampshire Avenue, and Route 108. Metrobus service is increased incrementally in response to increasing demand. A park-n-ride lot at Norbeck Road and Georgia Avenue is served by Metrobus.

Critical Intersections and Roadway Segments: Existing Georgia Avenue, between Norbeck Road and Route 108, is inadequate and unable to handle the future traffic volumes based on the planned development in the Olney area.

Programmed Transportation Improvements

The County FY 84-89 CIP includes two roadway improvement projects: Georgia Avenue improvement between Norbeck Road and Route 108, and an intersection improvement at Georgia Avenue and Emory Lane. The first of these projects - Georgia Avenue between Norbeck Road and Route 108 has also been added to the 1983-1988 State CIP. The joint project to be funded 50 percent by each agency. From a County-wide perspective, such a project will provide for a welcome addition to the State CIP. However, since the County had this portion of Georgia Avenue in its CIP last year, there is only a marginal increase in threshold development capacity in the Olney area.

Thresholds and the Relationship to Planned Development

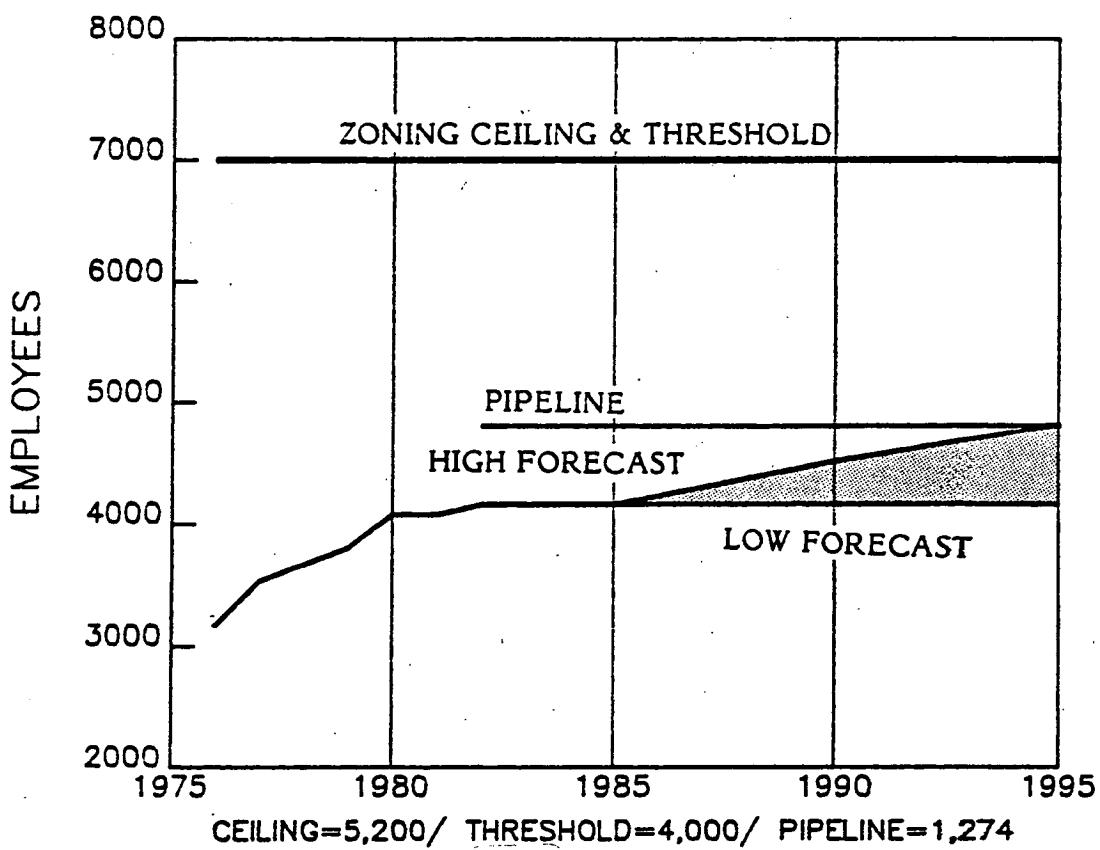
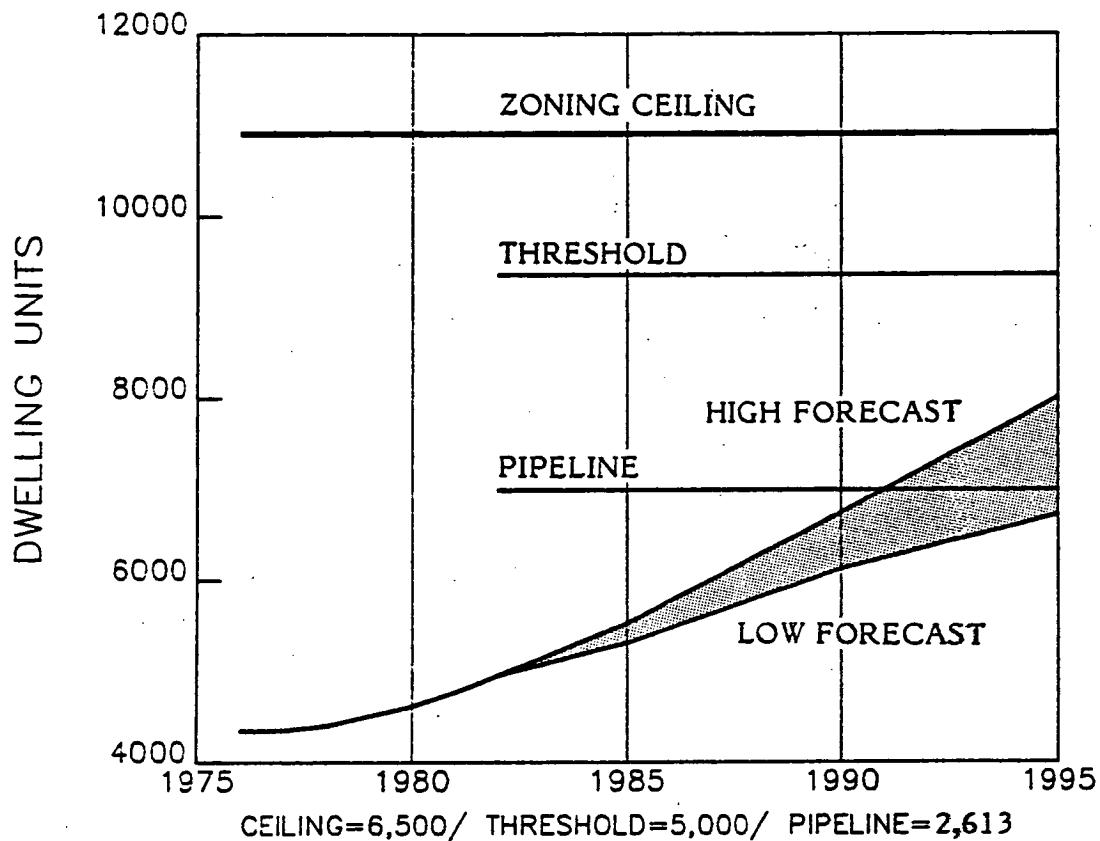
The widening of Georgia Avenue as a combined County and State project achieves the standard for that roadway envisioned in the Olney Master Plan. As such, a dwelling unit development threshold of 5,000 is recommended, which is the full Stage II of the Olney Plan. A threshold of 4,000 employees is also recommended.

Considerations for the Future

Areas of Local Congestion: The area feeding into Georgia Avenue at Emory Lane is the only potential local congestion problem currently identified. The Georgia Avenue project should solve the potential congestion.

Recommended Transportation Improvements: Several minor intersection improvements along Route 108 and Georgia Avenue are projected in conjunction with planned development subdivisions.

OLNEY POLICY AREA



GERMANTOWN WEST

Existing Conditions

Transit Availability: Since June 1980, MCDOT Ride-On Community Bus has been serving the west part of this area from the Lakeforest Mall in Gaithersburg via Frederick Avenue, Middlebrook Road, and MD 118. Regional bus service should reach this area when Metrorail opens to Shady Grove in late-1984.

Critical Intersections and Roadway Segments: There will be intersection capacity problems at MD 118 and Aircraft Drive, and MD 118 and Middlebrook Road when developer plans materialize into actual development. Also, the road segment of MD 118 between Middlebrook Road and Aircraft Drive will have a capacity problem.

Programmed Transportation Improvements

The current County FY 84-89 CIP includes the Great Seneca Highway and a bridge replacement project on Waring Station Road over the B&O Railroad. Also, as a transit-related project, the CIP includes the Germantown Commuter Rail Station project for County participation in improving the rail passenger station at Germantown as part of the MCDOT commuter rail improvement program.

Thresholds and the Relationship to Planned Development

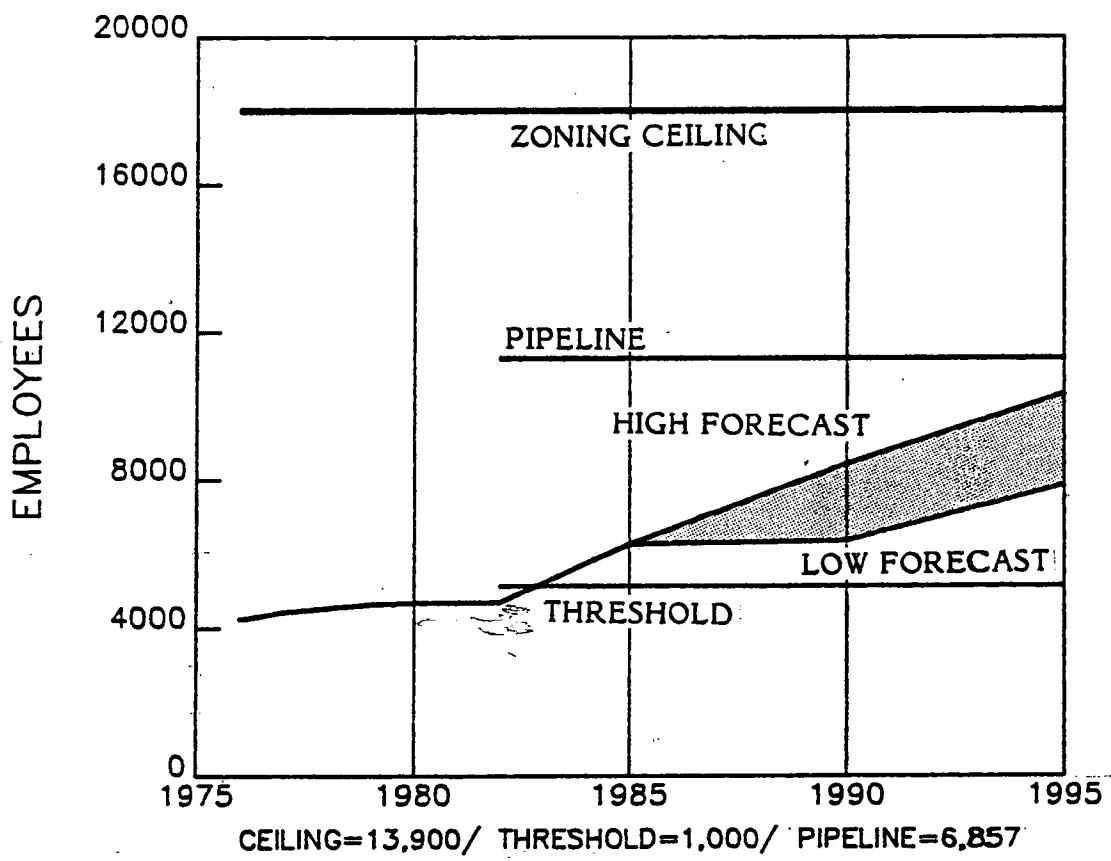
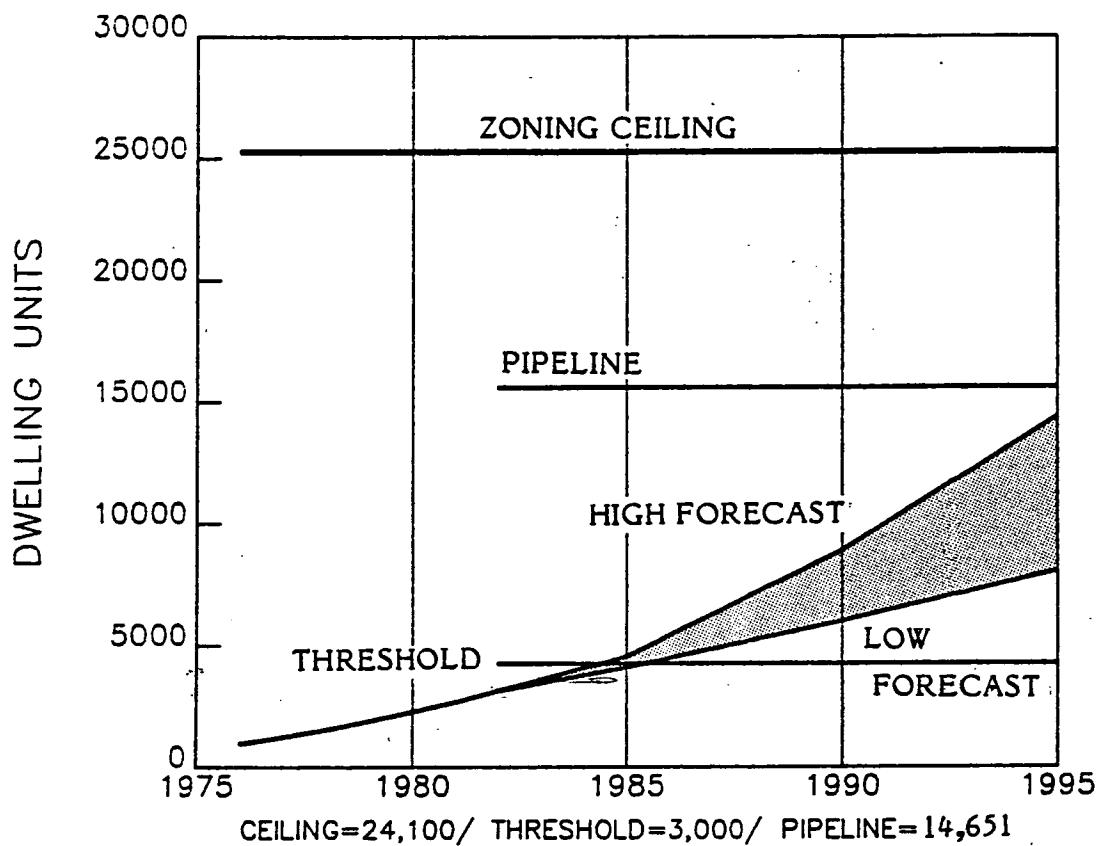
This area has a large number of sewer authorizations for residential as well as non-residential development as a result of substantial subdivision activity for the past several years. The recommended thresholds for this area are 3,000 dwelling units and 1,000 employees. For both residential and employment thresholds, the sum of the completions since 1977 and the current sewer authorizations exceed the thresholds by significant amounts. Consequently, transportation improvements (the MD 118 roadway between Middlebrook Road and Aircraft Drive and intersection improvements) are required as a condition for final APF approval for a number of preliminary subdivision plans. The MD 118 roadway improvement project is currently being developed through private contributions, and the County may participate at a later stage. This roadway improvement has limited capacity, and additional roadway improvements have been identified in reviewing recent subdivision plans establishing a second "club." The second roadway improvements will be made on MD 118 between the I-270 interchange and Wisteria Drive, Middlebrook Road between MD 118 and Great Seneca Highway, and several area intersections. These improvements also have been subscribed to their capacity, and the identifying further improvements is under study. Because these MD 118 and associated improvements are not contained in the current adopted CIP, they will not be counted as adding to the threshold capacity, except for those developers who will contribute to their construction. Details of these road projects and developer contribution have been worked out jointly among the Planning Board staff, County Executive staff and participating developers.

Considerations for the Future

Areas of Local Congestion: In order to avoid potential local congestion, it is anticipated that a portion of MD 118 will be widened to six lanes and have intersection improvements at Aircraft Drive, Crystal Rock Drive, Middlebrook Road, and Clopper Road through private developer contributions and construction.

Recommended Transportation Improvements: Before additional growth can be approved as envisioned by the Germantown Master Plan Amendment, several actions by transportation agencies and private sector developers should be carried out. MCDOT should keep the current schedule for the Great Seneca Highway and should increase the funding in the program so that each potential phase of the entire project is sufficiently funded for construction. The MdDOT should take, as a component from the presently on-going project planning study for I-270, a separate project to provide for an interchange at Middlebrook Road. This is similar to what was done by the MdDOT to provide for the programming of an up-graded interchange at Montgomery Village Avenue and West Diamond Avenue. From a Countywide development perspective, a Middlebrook Road Interchange would be an important project. The MdDOT should also reinstate the MD 118 Project Planning Study with a reduced scope of alternatives covering the area from MD 117 (Clopper Road) to MD 355 (Frederick Avenue). Work should also be initiated on a Project Planning Study of MD 117 (Clopper Road) from Longdraft Road to MD 118 (Germantown Road). In the short-term, new developments in this area would still have the option of identifying and participating in clubs to specific projects or programs which add to transportation capacity. MCDOT should consider a project to widen Middlebrook Road between Great Seneca Highway and MD 355, to be done in conjunction with the MdDOT project for the Middlebrook Road Interchange.

GERMANTOWN WEST POLICY AREA



GERMANTOWN EAST

Existing Conditions

Transit Availability: Since June 1980, MCDOT Ride-On Community Bus is serving this area from the Lakeforest Mall in Gaithersburg via Frederick Avenue, Middlebrook Road and Route 118. Regional bus service should reach this area when Metrorail opens to Shady Grove in late-1984.

Critical Intersections and Roadway Segments: There are intersection capacity problems at MD 355 and MD 27, MD 355 and MD 118, and MD 355 and Middlebrook Road. Insufficient roadway segment capacity may develop on MD 118 and MD 355 north of MD 118 due to a large number of approved preliminary plans in the immediate area.

Programmed Transportation Improvements

The current County FY 84-89 CIP includes an intersection improvement project at MD 118 and MD 355.

Thresholds and the Relationship to Planned Development

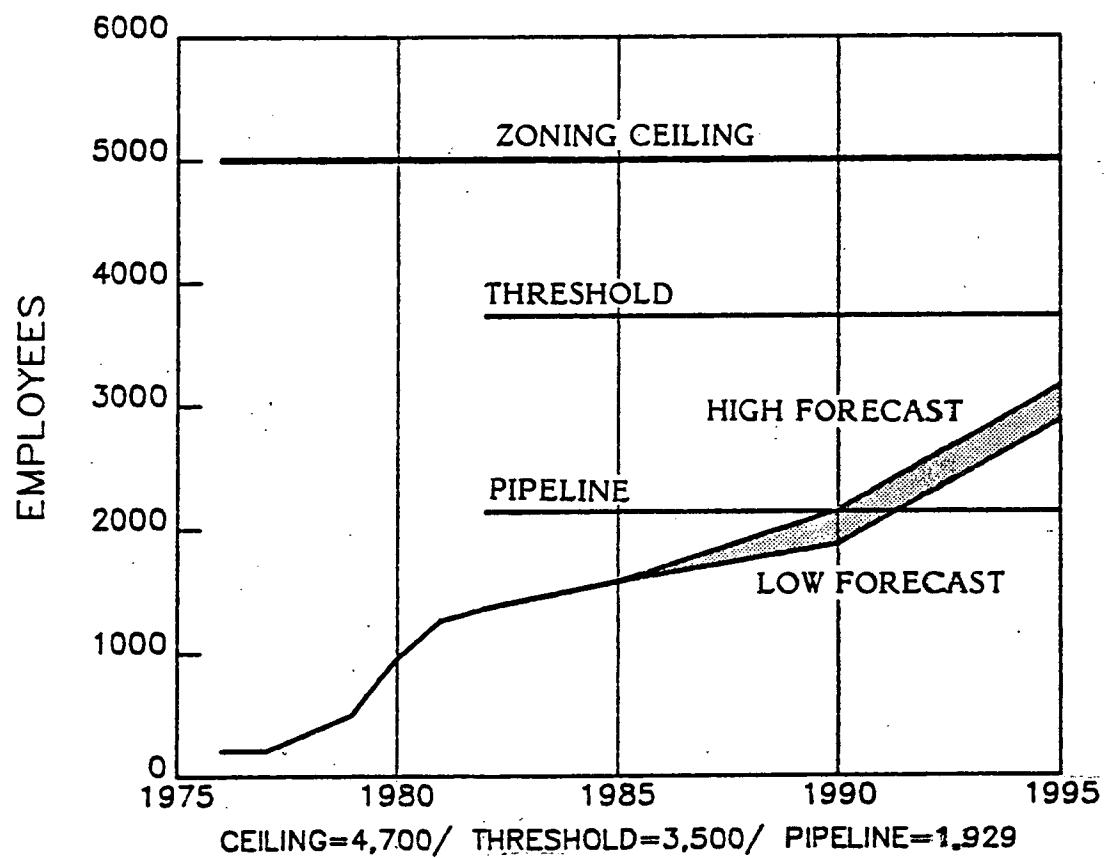
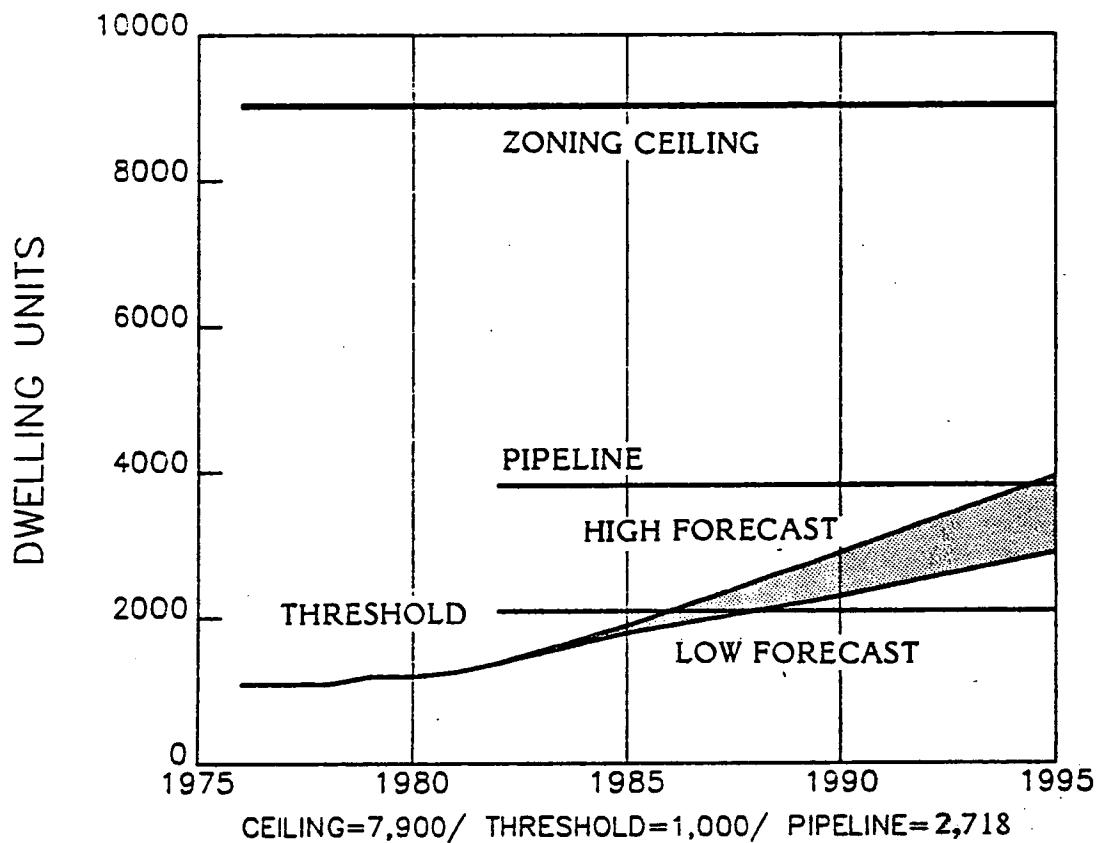
The sum of sewer authorizations and completions since 1977 exceeds the recommended threshold for residential development. Some additional threshold capacity is available for non-residential development. To accommodate a large number of already approved residential preliminary plans and additional non-residential developments, area roadway improvements should be considered.

Considerations for the Future

Areas of Local Congestion: As noted, there are intersection capacity problems at MD 355 and MD 27, and at MD 355 and Middlebrook Road. Improvements to the intersection of MD 355 and Middlebrook Road have been made as conditions of approval for several subdivisions approved in the area.

Recommended Transportation Improvements: As new developments on the north side of MD 118 (Germantown Road) are reviewed, improvements to a segment of MD 355 (Frederick Avenue) north of MD 118 may be required to accommodate local growth. Also, it is recommended that the MdDOT reinstate the Project Planning Study for MD 118 with the reduced scope of alternatives. The limits of such a study should be from MD 117 (Clopper Road) to MD 355 (Frederick Avenue) in Germantown East. Such a study may produce a roadway project to serve the large industrially zoned tract of land on the north side of MD 118 east of I-270. MCDOT should consider a project to widen Middlebrook Road between Great Seneca Highway and MD 355 to be done in conjunction with the Md DOT project for the Middlebrook Road Interchange.

GERMANTOWN EAST POLICY AREA



CLOVERLY

Existing Conditions

Transit Availability: Transit service in the Cloverly area is provided only along New Hampshire Avenue. It is unlikely that additional route service can be supported with the relative low-density development existing throughout most of the area.

The critical roadway segment for this policy area is New Hampshire Avenue. This roadway is congested in the adjacent White Oak-Colesville policy area. North of the Colesville Shopping Center (Randolph Road), New Hampshire Avenue is only two lanes wide. The 1981 average annual weekday traffic between Randolph Road and Notley Road was 23,800 and was approaching 20,000 between Notley Road and Good Hope Road. Level of Service E or lower is occurring along this road at Randolph Road/East Randolph Road and at Notley Road.

Programmed Transportation Improvements

The Capital Improvements Program includes improvements to the intersection of New Hampshire Avenue at Notley Road. The reconstruction and relocation of the New Hampshire Avenue/Bonifant Road/Good Hope Road intersections remain as active projects in the CIP. A project is in the CIP for construction which will widen Randolph Road from New Hampshire Avenue to Fairland Road in the adjacent White Oak Policy Area.

Thresholds and the Relationship to Planned Development

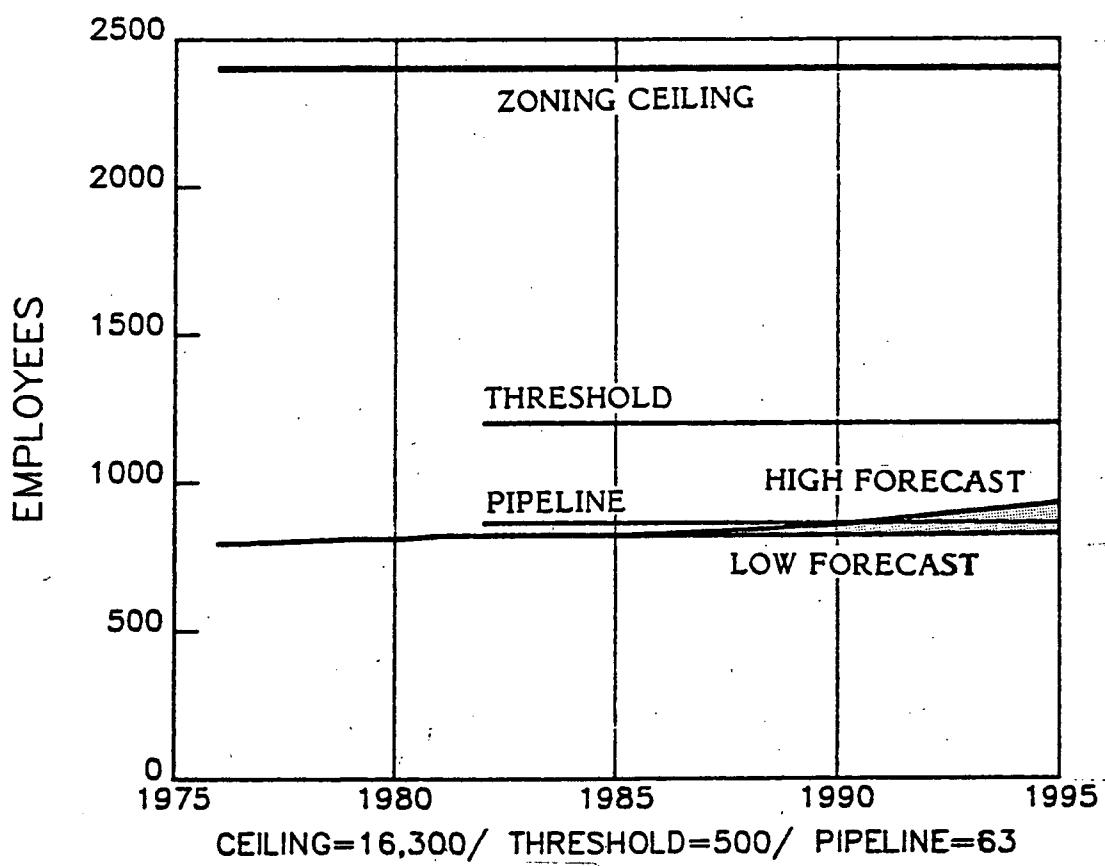
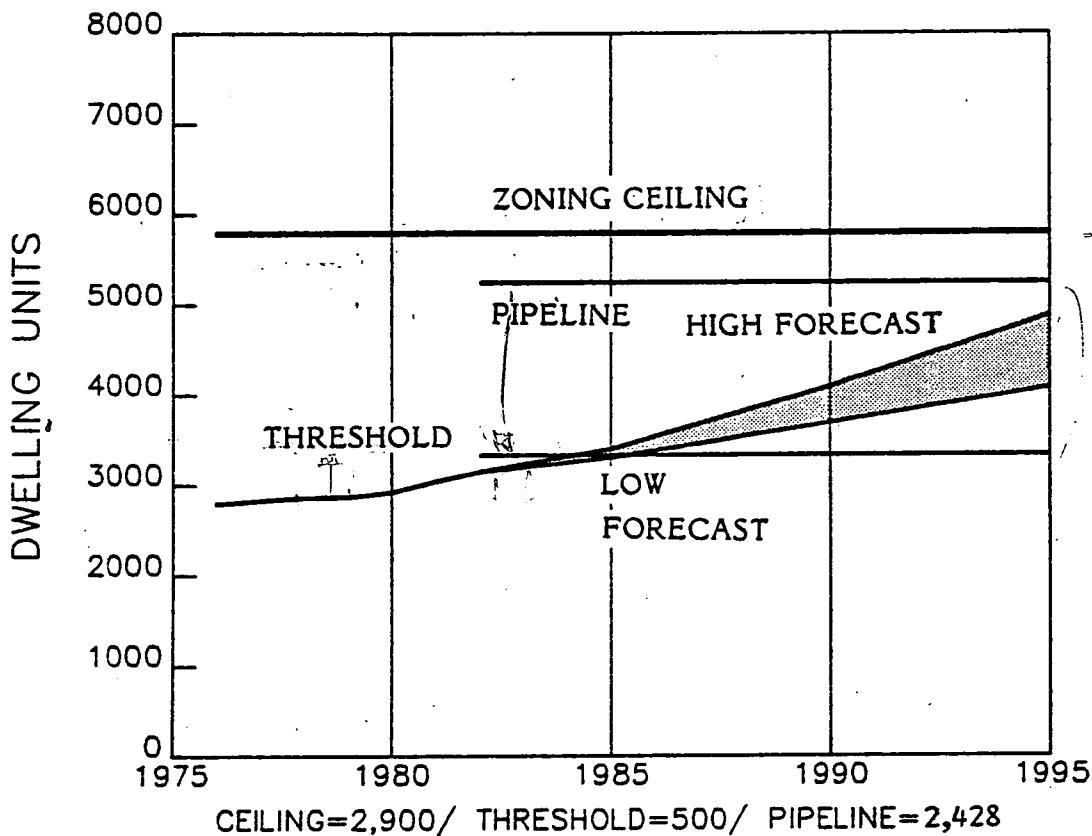
The residential threshold has been exceeded. However, limited employment threshold capacity still remains. The reconstruction of New Hampshire Avenue to four travel lanes north of Randolph Road will create the potential for the approval of additional dwelling units in the Cloverly area.

Considerations for the Future

Areas of Local Congestion: As has been discussed, the area of local congestion includes New Hampshire Avenue from East Randolph Road to Bonifant Road.

Recommended Transportation Improvements: To reduce congestion and allow additional development to take place in the Cloverly area, New Hampshire Avenue north of Randolph Road will have to be widened to four lanes, at a minimum from Randolph Road to Notley Road and more effectively north to Bonifant Road Relocated. The MdDOT should initiate a Project Planning Study for such a widening. Given the limited possible alternatives that could be considered, the study would not be complex. In addition, the MdDOT and/or MCDOT could provide commuter parking fringe lots convenient to New Hampshire Avenue bus service, possibly using excess space in existing private and church parking lots. The Board has recommended that MdDOT should construct the MD 28/MD198 Connector which is a project currently under study as part of the Intercounty Connector/Rockville Facility study.

CLOVERLY POLICY AREA



POTOMAC

Existing Conditions

Transit Availability: Potomac is currently served by the regional bus system on parts of Seven Locks Road, Falls Road, River Road, and Bradley Boulevard. The services will be improved before 1985. In addition, fringe parking is available at Montgomery Mall.

Critical Intersections and Roadway Segments: The most severe congestion in the Potomac area occurs along Seven Locks Road along most of its length north of River Road. Some of the congestion will be decreased due to projects in the CIP.

Programmed Transportation Improvements

Projects in the CIP for this area include: (1) Montrose Road Extended, (2) Democracy Boulevard Extended, and (3) the bridging of Fernwood Road over I-270. The first two are fully programmed for construction during the time frame of the current CIP; the Fernwood Road bridge is programmed for approximately 50 percent of the construction cost with the stipulation that 50 percent of the cost is to be funded by developers. As anticipated last year, the State Highway Administration included the interchange between Falls Road and I-270 in the 1983/88 CTP. This interchange is nearby in the Rockville Area.

Thresholds and the Relationship to Planned Development

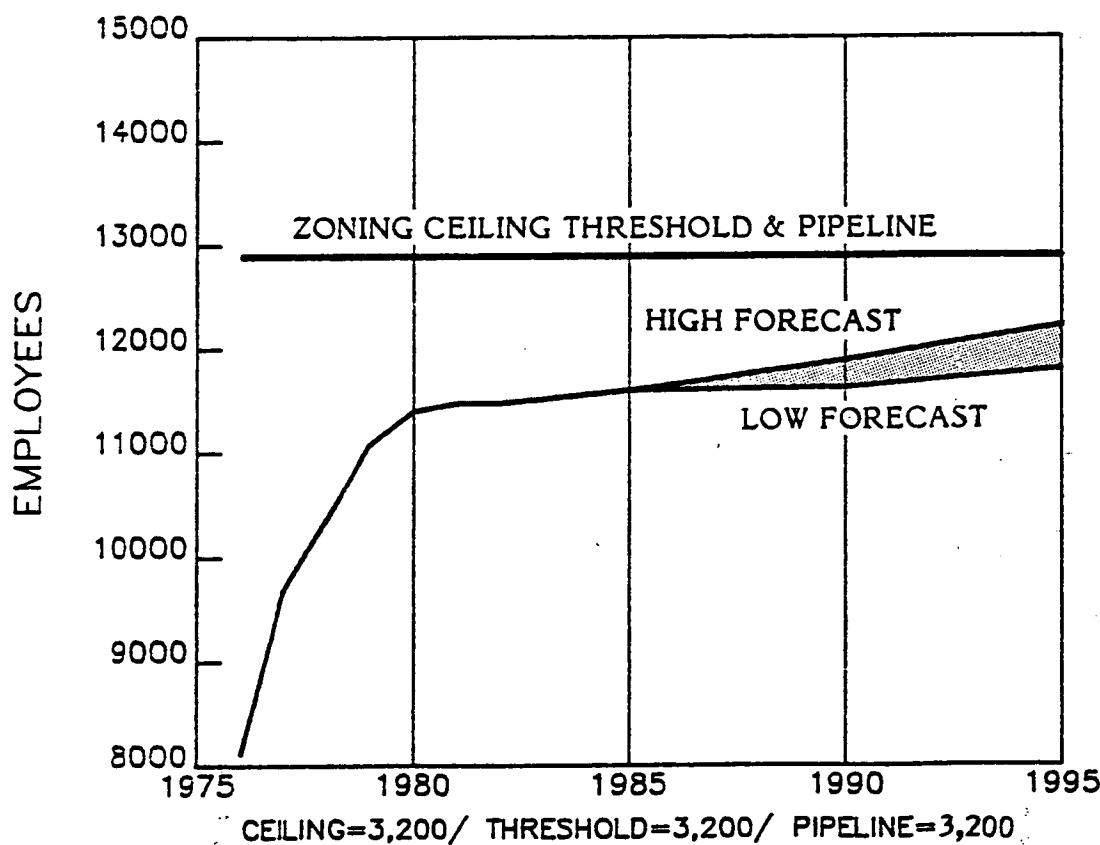
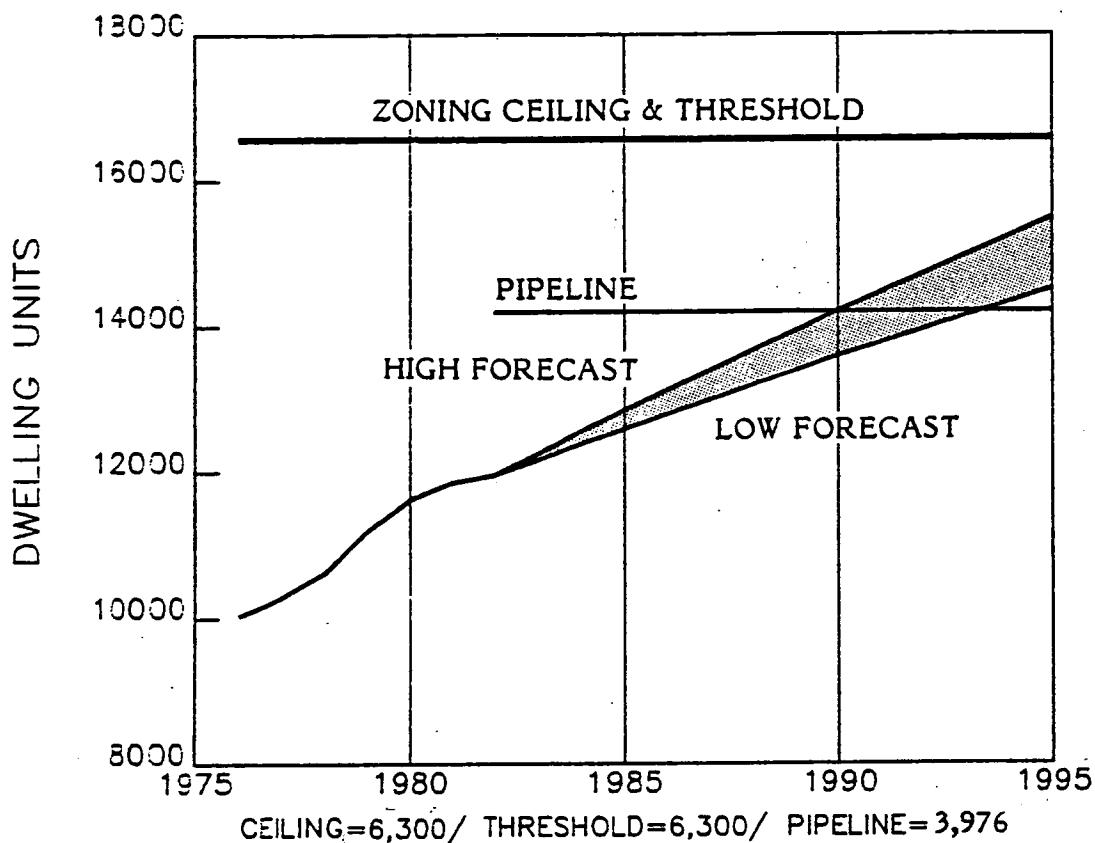
The Master Plan for the Potomac Subregion, adopted in 1980, specified retaining two-lane cross-sections for most roads, even though congestion will occur. It further specified that when the extensions of Democracy Boulevard and Montrose Road are at least 50 percent programmed for construction, the remaining vacant land in the area can develop to the extent allowed by the then-proposed zoning. This will result in thresholds of approximately 6,300 dwelling units and 3,200 employees. The plan notes that the full zoning development will result in traffic congestion in excess of standards for a Group II policy area.

Considerations for the Future

Areas of Local Congestion: In the "Potomac Policy Area" part of the Potomac Subregion Master Plan, local area congestion reviews will not be required. This is in accordance with the master plan which indicates that since the area is in effect a cul-de-sac with little through traffic, the Board will pursue a policy of maintaining two-lane roads, with two exceptions. The Board recognized that this will produce levels of traffic congestion during peak periods greater than that considered acceptable in other areas of the County, but feels that this is a legitimate trade-off in order to maintain the character of the area.

Recommended Transportation Improvements: The Potomac Master Plan recognizes that widening Seven Locks Road to four lanes from Tuckerman Lane to Montrose is a potential future improvement. The Transportation Planning staff have recommended to MCDOT that they should begin to program this project. The average annual weekday traffic on Seven Locks Road near Montrose Road is over 21,000, making it one of the most heavily travelled two-lane roads in the County. The MdDOT is continuing the project planning study to upgrade I-270 between MD 121 and the I-270 Spur.

POTOMAC POLICY AREA



FAIRLAND/WHITE OAK

Existing Conditions

Transit Availability: The area is currently served by regional bus service along US 29, New Hampshire Avenue, across Randolph Road, and along Old Columbia Pike. MCDOT Ride-On Community bus service is available in the West Hillandale area.

Critical Intersections and Roadway Segments: There are several critical roadway segments and intersections in the Fairland/White Oak area. Columbia Pike (US 29) is experiencing low peak-hour levels of service at Randolph Road, Industrial Parkway, and Stewart Lane. New Hampshire Avenue, in the vicinity of Hillandale, at Lockwood Drive, and at Randolph Road is also heavily congested because of high traffic volumes.

Programmed Transportation Improvements

The pace at which developers are submitting preliminary subdivision plans for approval, and existing conditions along Columbia Pike and New Hampshire Avenue indicate the need for additional road capacity. The County CIP includes the widening of US 29 between Fairland Road and Greencastle Road. Other projects are also included in the Capital Improvements Program. Developer participation projects include intersection improvements to New Hampshire Avenue at Lockwood Drive, the addition of two 12-foot traffic lanes on US 29 between Musgrove Road and Fairland Road, and intersection improvements at Briggs Chaney Road and Route 29, as well as development of a fringe parking lot and a private shuttle bus system to connect development with the Silver Spring Metro Station.

Thresholds and the Relationship to Planned Development

The residential threshold has been exceeded; 3,161 additional jobs are permitted, given the currently programmed improvements, recent development, and sewer authorizations. The thresholds were selected after careful consideration of their relationship to the traffic capacity of US 29. This road is a heavily used primary state highway with a high proportion of its traffic volume originating from, and destined for, areas outside of Montgomery County, especially Howard County. The traffic impact of the total amount of new development permitted under the Eastern Montgomery County Master Plan is relatively less than the potential impact of the total amount of new development possible in Howard County, since Howard County controls its own planning and zoning. However, new development in Howard County has other alternative road routes in this general corridor, such as I-95, US 1, or the Baltimore-Washington Expressway. Also, the destination of traffic from new development in Howard County, which geographically links to Baltimore as well as Washington D.C., has a higher probability of being dispersed in other directions. The traffic from new development in eastern Montgomery County will tend to interact predominantly with the rest of the Washington metropolitan area.

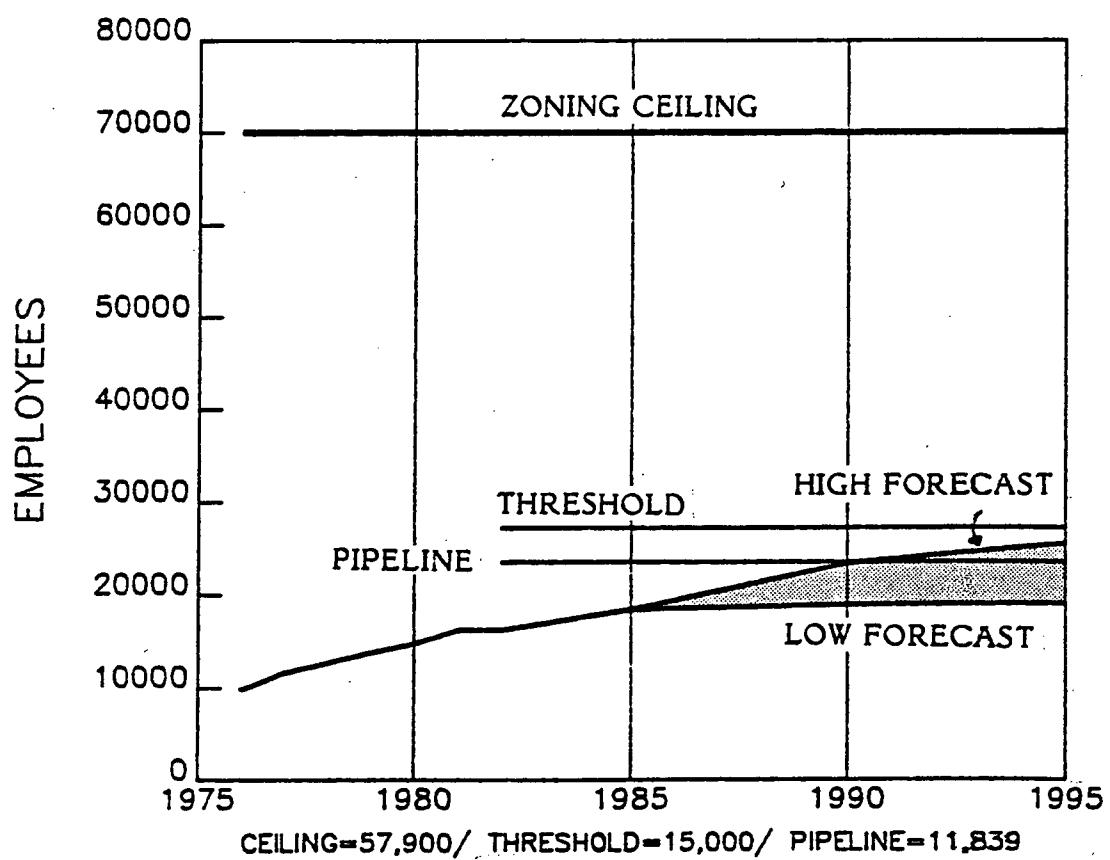
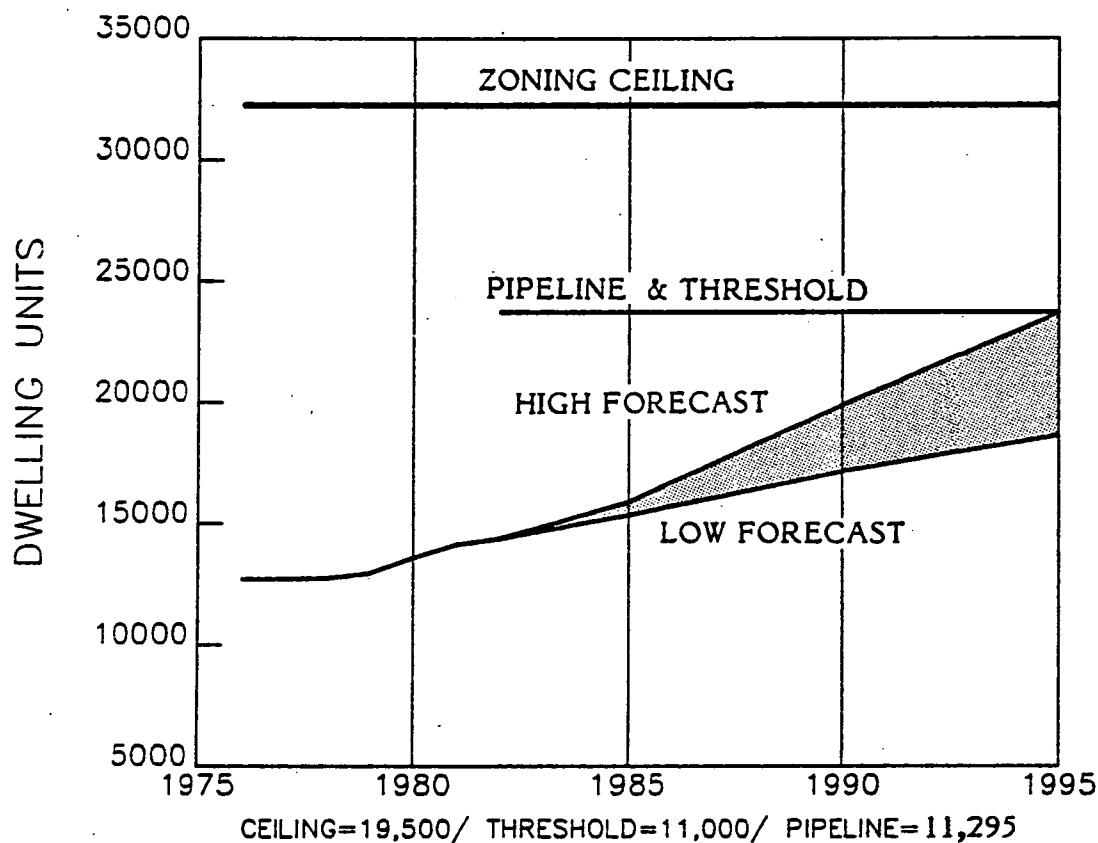
For these reasons, it seems proper to set a level of service standards for this policy area that permits the development anticipated by the Eastern Montgomery Master Plan, so long as it does not excessively jeopardize the functioning of US 29 as a major transportation artery. The D/E level, which was used in establishing this threshold, is higher than desirable for the current level of transit service but it is acceptable because of three factors: 1) the through traffic built-up from Howard County may never actually reach this level, as noted above, 2) the master plan anticipates and encourages additional transit service along Route 29, and 3) excess congestion can be monitored through the local area review process.

Considerations for the Future

Areas of Local Congestion: As traffic continues to build up on US 29 due to growth outside the County, the area south of New Hampshire Avenue will potentially experience increased congestion, which will be monitored and controlled as noted.

Recommended Transportation Improvements: The significant amount of subdivision activity that has been occurring in this area over the past year, and the transportation conditions being required of them, indicate a strong need for additional transportation capacity either by way of facility improvements or transit service or both. The MdDOT should program some additional special projects for intersection improvements and/or lane widenings along US 29 (Columbia Pike). This corridor should also be the first priority in the County for the next Project Planning Study by MdDOT. That study should examine the entire need from just south of MD 650 (New Hampshire Avenue) to MD 198 (Sandy Spring Road). Consideration should also be given to the possible reopening of the Old Columbia Pike Bridge over Northwest Branch to motorized traffic and to the implementation of Commuter Fringe Parking Lots. MCDOT is budgeted this year to conduct a preliminary project engineering study for the US 29 Corridor to find the most cost effective methods to alleviate the current and projected traffic congestion. This study should examine new transit services as a means of reducing congestion. The MCDOT should also program further intersection improvements at Lockwood Drive and MD 650 (New Hampshire Avenue) to serve additional subdivision in that local area. Improvements to realign and relocate segments of Briggs Chaney Road should be programmed as recommended in the Eastern Montgomery County Master Plan.

FAIRLAND/WHITE OAK POLICY AREA



GAITHERSBURG

Existing Conditions

Transit Availability: Gaithersburg is currently served by private commuter bus, commuter rail, and a MCDOT Ride-On bus system. No service is currently provided by Metrobus. Metrorail service is scheduled to be in operation to Shady Grove in late-1984. At that time there will be Metrobus feeder bus service and an expansion of the Ride-On System.

Critical Intersections and Roadway Segments: There are several intersections in the Gaithersburg area operating at or approaching Level of Service E. Such conditions can be found along MD 355, Shady Grove Road, MD 28 and the intersection at MDs 115 and 124. In addition, there are several roadway segments with existing inadequate capacity, such as parts of MD 28 and MD 355.

Existing conditions in several instances are worse today than they will be in the future. The programmed transportation improvement will alleviate some existing congestion in addition to providing capacity for the amount of development in the threshold.

Programmed Transportation Improvements

The Gaithersburg area has the largest number of programmed transportation improvement projects of any of the areas in the County, with nearly twenty projects. The most recent CIP and State Consolidated Transportation Program include three new projects: (1) I-370 between I-270 and the Shady Grove Metro Station, (2) Shady Grove Road between MD 28 (Darnestown Road) and I-270 and (3) intersection improvements at Muddy Branch Road/MD 28.

Thresholds and the Relationship to Planned Development

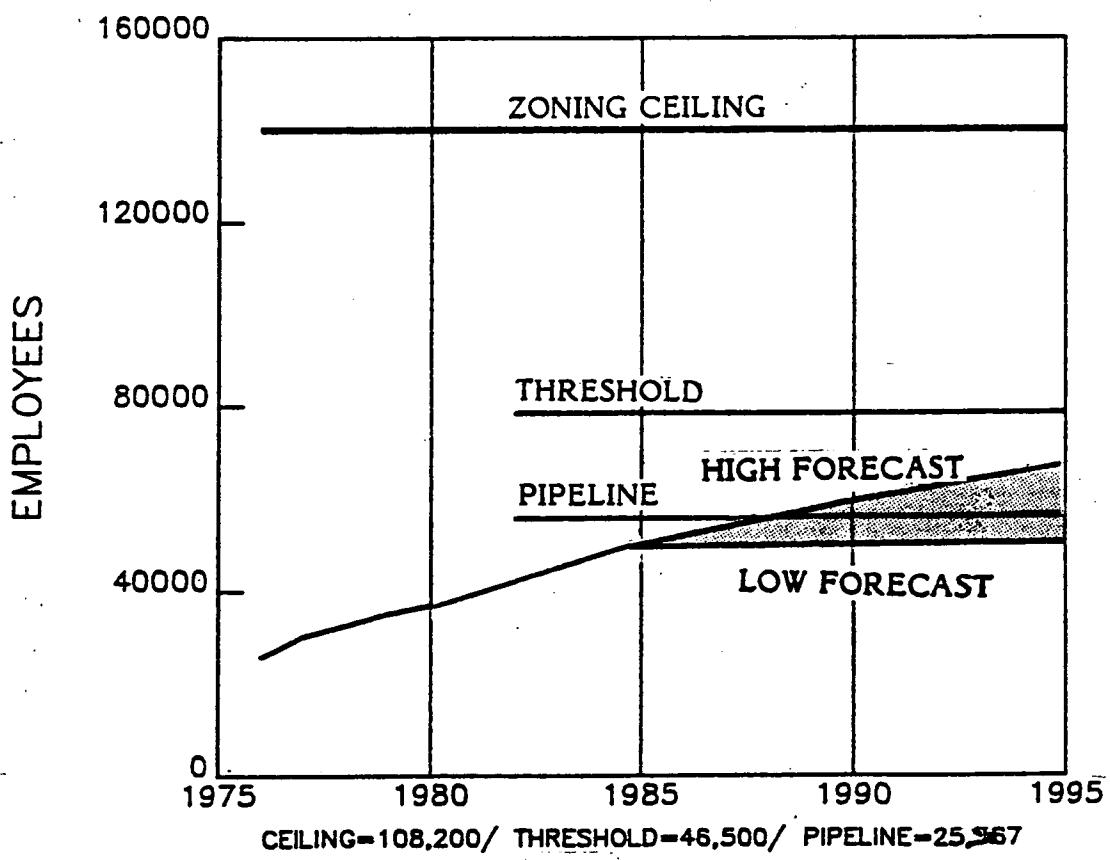
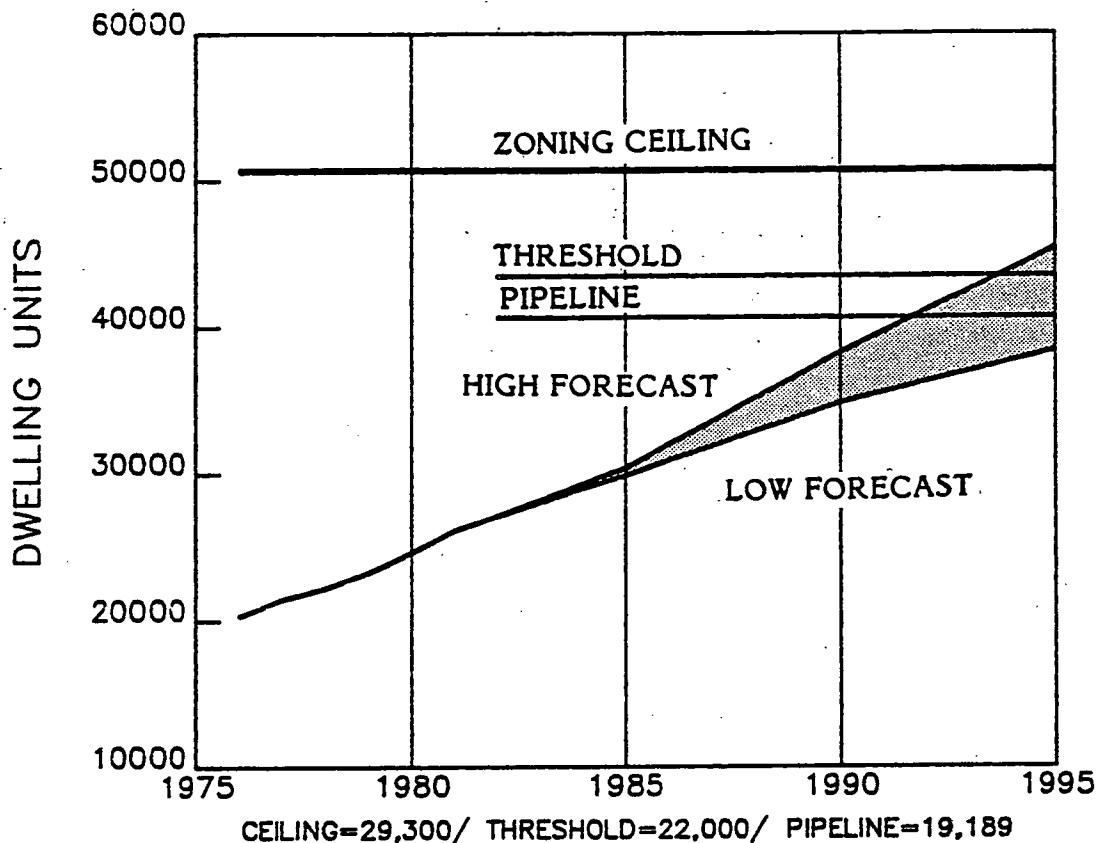
The recommended thresholds for this area are 22,000 dwelling units and 46,500 employees. These thresholds do account for development within the City of Gaithersburg. Subtracting pipeline activity and growth since 1977, capacity exists for subdivision approval of an additional 2,811 dwelling units and 21,133 additional employees.

Considerations for the Future

Areas of Local Congestion: There are several locations within the Gaithersburg area for which local area transportation review will be required. Among these are: (1) the Shady Grove Road and I-270 interchange area, (2) Shady Grove Road east of I-270, (3) along MD 28 west of Rockville, (4) in the vicinity of the Montgomery Village Avenue/MD 355 intersection, (5) areas near the County Airpark and the MDs 115/124 intersection, and (6) areas in the vicinity of MD 355 and Gude Drive.

Recommended Transportation Improvements: A number of major projects are needed to provide additional capacity in this area. A high priority for project planning initiation by MdDOT is a study of MD 28 (Darnestown Road) Relocation. Existing congestion problems in that area have kept this as a high priority. The study has been one recommended for the past three years by the local elected officials for MdDOT to consider. Other projects which would be desirable for MCDOT to implement include: (1) the proposed western extension of I-370 between Great Seneca Highway and Fields Road, (2) the widening of Middlebrook Road between Great Seneca Highway and Route 355, and (3) improvements to Goshen Road from Oden'hal Road to Snouffer School Road. The MdDOT should also begin programming for construction of at least two lanes of the Midcounty Highway (once known as Eastern Arterial) from Shady Grove Road to MD 97 (Georgia Avenue). This segment of the Midcounty Highway has location approval from the Federal Highway Administration. MdDOT should also program the upgrading of Clopper Road between Route 118 and Longdraft Road.

GAIthersburg Policy Area



NORTH BETHESDA

Existing Conditions

Transit Availability: The North Bethesda area is well served by regional bus service, some MCDOT Ride-On service, commuter rail service from Garrett Park, two fringe park-n-ride lots, as well as express bus service to and from the Silver Spring Metro Station via the Capital Beltway. Metrorail service will begin in late-1984 at Grosvenor, White Flint, and Twinbrook, and will be augmented by a restructured bus system feeding the stations and their immediate vicinities.

Critical Intersections and Roadway Segments: There are many intersections in the North Bethesda area at or approaching Level of Service E. Such conditions can be found along Montrose and Randolph Roads, Rockville Pike, Old Georgetown Road, Democracy Boulevard, and Twinbrook Parkway.

Programmed Transportation Improvements

Some of these congestion conditions may be improved, either temporarily or over the long term, by the programmed transit and roadway improvement projects such as the extension of Tuckerman Lane and transit access projects in the vicinity of the White Flint Station. The relatively large number of projects in this area are intended to relieve existing problems, provide necessary access to the Metro Stations, and to serve future development.

Construction funding for the Fernwood Road bridge over I-270 is set at approximately 50 percent in the CIP with the condition that developers provide the remaining 50 percent. Ritchie Parkway (in the adjacent City of Rockville) between Seven Locks Road and Rockville Pike is 100 percent funded for construction. The widening of East Jefferson Street between Montrose Road and Rollins Avenue is also a CIP project.

Thresholds and the Relationship to Planned Development

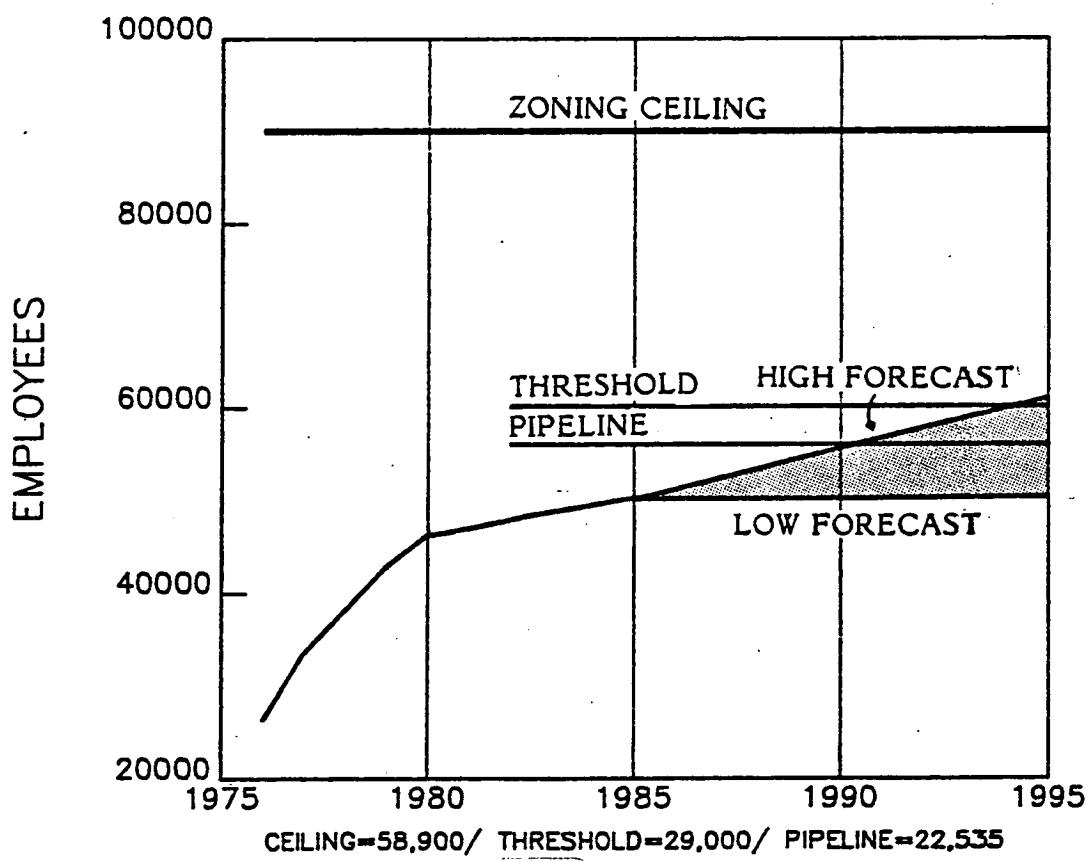
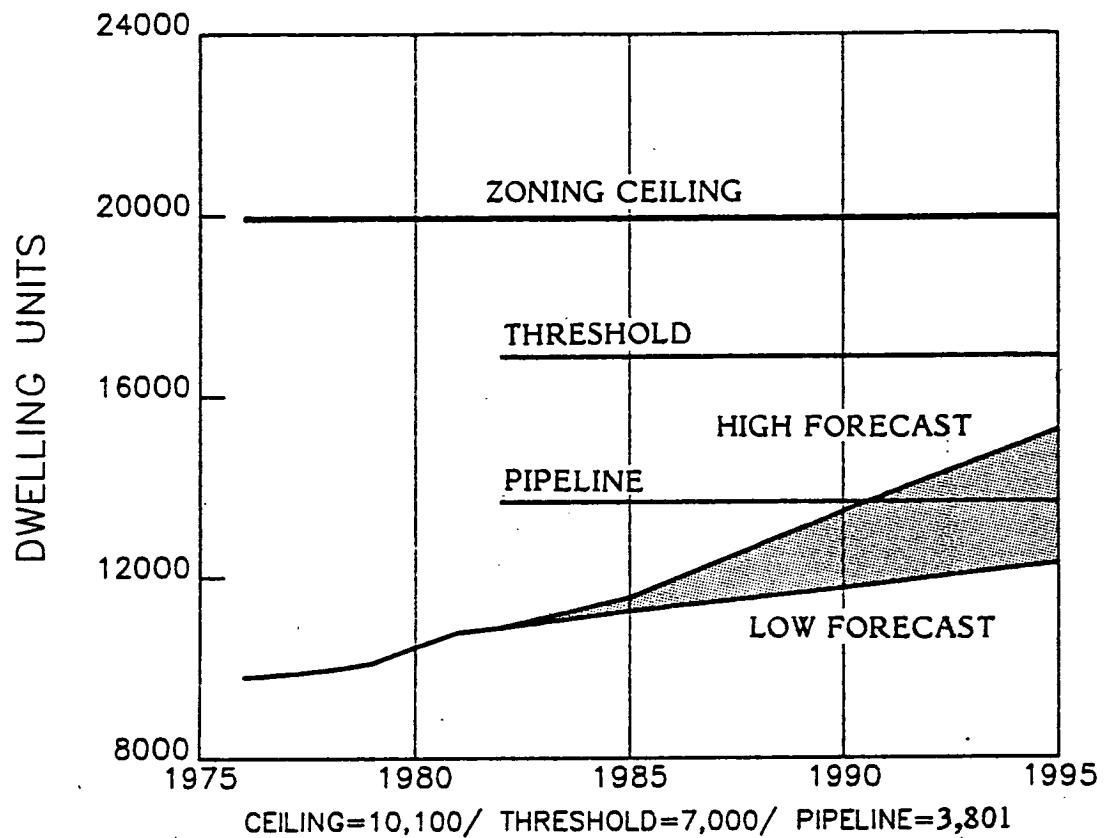
The recommended thresholds for this area are 7,000 dwelling units and 29,000 employees. The North Bethesda Policy Area contains only the planning area of North Bethesda/Garrett Park. The thresholds do not include development within the City of Rockville since the City has its own planning and zoning powers. Subtracting the pipeline and growth since 1977 from the thresholds will allow the approval of 3,199 additional dwelling units and about 6,465 additional employees.

Considerations for the Future

Areas of Local Congestion: There are several locations within the North Bethesda area for which local transportation reviews may be required. Among these are Davis Tract, Montrose Road/East Jefferson Street and Twinbrook Parkway locations. Several recent subdivision reviews in this policy area have required intersection improvements in order to pass the APFO requirements.

Recommended Transportation Improvements: The project planning study by the State Highway Administration for the Rockville Facility may identify feasible transportation improvements which could further increase the threshold in this area. The Board has recommended that specific improvements to Montrose Road from East Jefferson Street, overpassing MD 355 (Rockville Pike) and the railroad should be constructed. Given the existing traffic problems in this area and the need for convenient access to Metro, such improvements should be given a relatively high priority from a Countywide perspective.

NORTH BETHESDA POLICY AREA



KENSINGTON/WHEATON

Existing Conditions

Transit Availability: This area is well served by regional bus service, several MCDOT Ride-On routes, commuter rail service, a park-n-ride lot, as well as express bus connection to the Silver Spring Metro Station.

Critical Intersections and Roadway Segments: There are several intersections in the area currently operating at Level of Service E, and about a dozen at Level of Service D. Most of these congested conditions occur along Randolph Road, Georgia Avenue, Connecticut Avenue, Viers Mill Road, and University Boulevard.

Programmed Transportation Improvements

There are a few projects which are fully programmed for construction in the northern part of this area and some in the vicinity of the transit stations. Construction of the Glenmont Line, north of Silver Spring, has started and the Wheaton station is programmed to open within the timeframe of the CIP. The remaining construction and the opening of the Forest Glen and Glenmont Stations are not assured within this time. MdDOT has programmed the upgrading and widening of Layhill Road (MD 182) to a four-lane divided highway between Georgia Avenue (MD 97) and the Argyle Club Road.

Thresholds and the Relationship to Planned Development

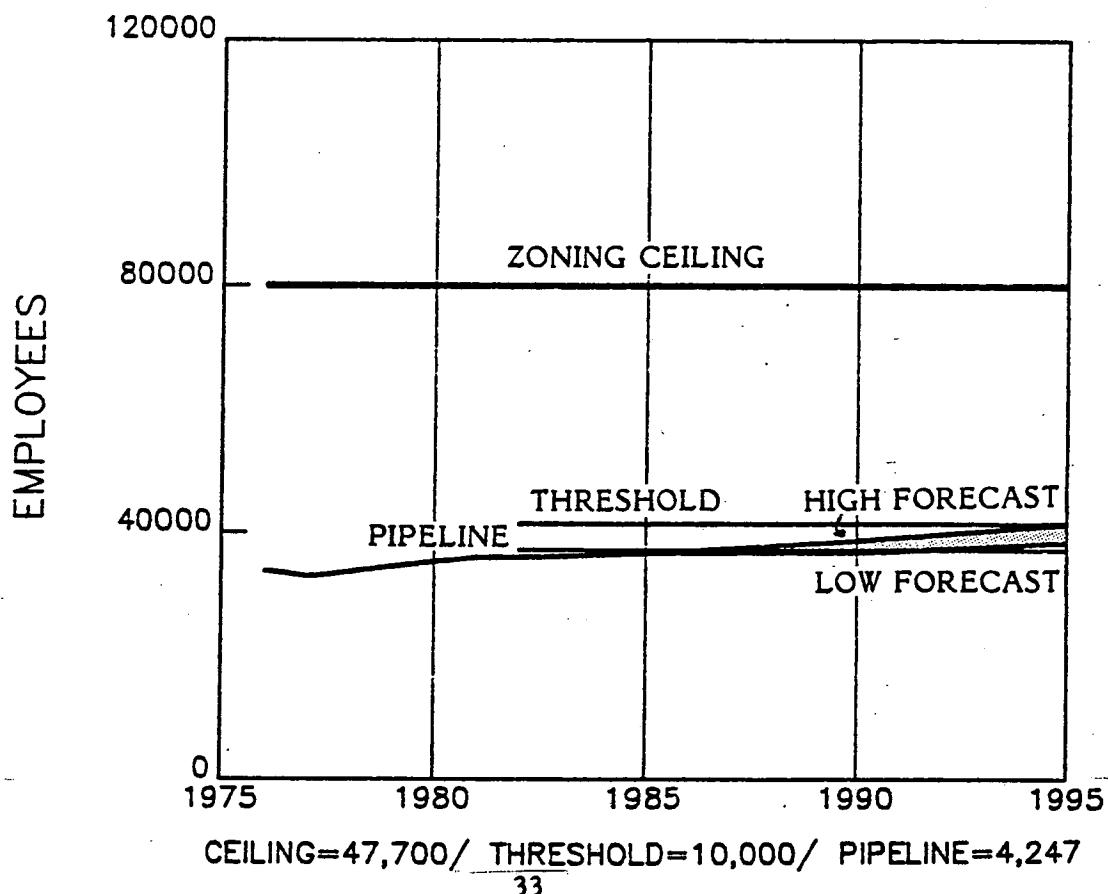
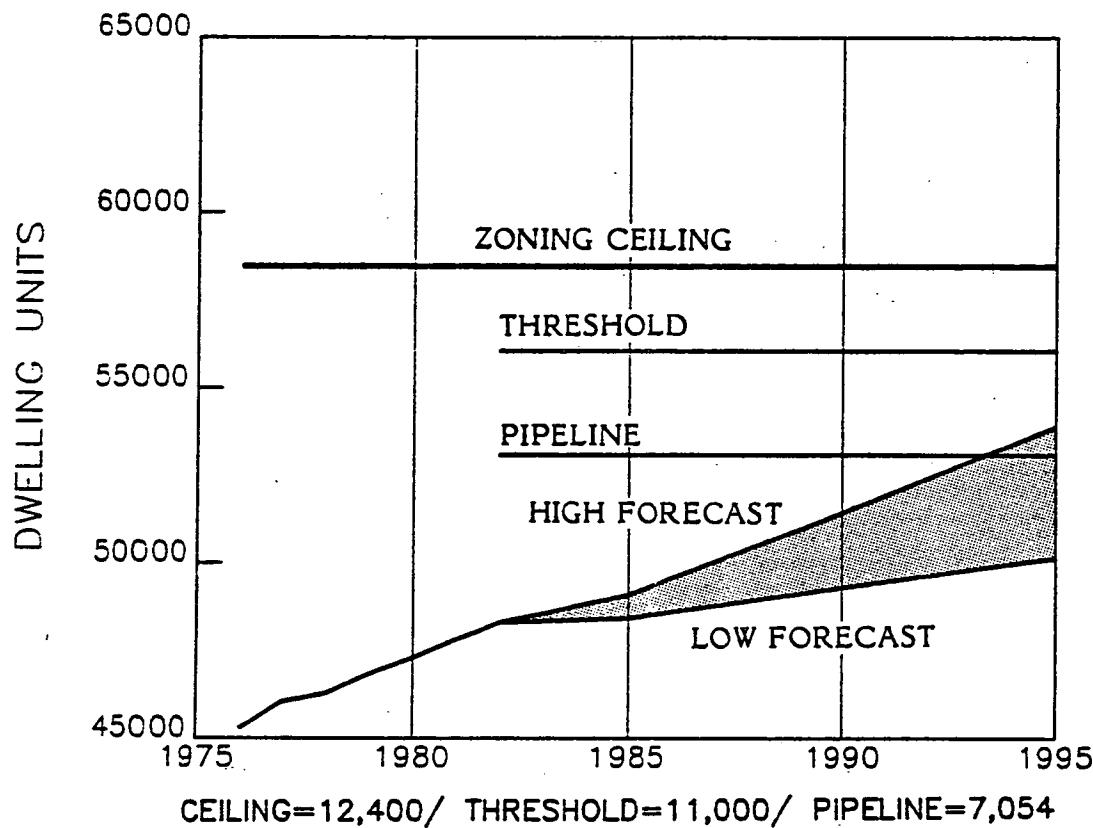
The thresholds for this area recommend 11,000 dwelling units and 10,000 employees. Subtracting the pipeline and growth since 1977 from the thresholds will permit an additional 3,946 dwelling units and 5,753 employees. The change in the thresholds reflects the combined effects of the the programming of Layhill Road, the Board's determination that only the Wheaton Station of the Glenmont Line is programmed, and the effect of the nearby I-495 widening project.

Considerations for the Future

Areas of Local Congestion: There are several locations within the Kensington/Wheaton Area for which local area transportation reviews will be required. Among these are Kensington Business District, Wheaton Central Business District, Glenmont Business District, Randolph and Viers Mill, Bel Pre and Georgia, and Georgia and Dennis Avenue locations.

Recommended Transportation Improvements: The Project Planning Study by the State Highway Administration for the Rockville Facility may identify feasible transportation improvements which could further increase thresholds in this area. In the Four Corners portion of this policy area, the MdDOT should program a special project to make traffic operation improvements at the intersection of US 29 (Colesville Road) and MD 193 (University Boulevard). This location has been and will continue to be one of the most heavily congested locations in the County.

KENSINGTON/WHEATON POLICY AREA



BETHESDA

Existing Conditions

Transit Availability: This area is served by regional bus service and will shortly have a full range of transit services with the opening of the Metrorail line to Shady Grove in late 1984.

Critical Intersections and Roadway Segments: There are many intersections in the Bethesda area which are operating at or approaching Level of Service E. Such conditions are found along River Road, Old Georgetown Road, Wisconsin Avenue, and Connecticut Avenue.

Programmed Transportation Improvements

Some congestion conditions will be improved in the short-term, and possibly the long-term by the programmed transit and station access improvements. Stations serving the Bethesda area will be at Friendship Heights, downtown Bethesda, and at the Medical Center. The rail service will be augmented by a restructured Metrobus service feeding the stations and their immediate vicinities as well as by the initiation of MCDOT Ride-On community bus service. The County Executive had recommended that pre-Metro Ride-On service in the Bethesda area start in the Fall of 1983 but the starting date has now been moved to May 1984. A personalized ridesharing program (patterned after the successful Share-A-Ride in Silver Spring) is scheduled to begin in the fall of 1983 for the Bethesda Central Business District.

The limited number of County road projects (such as Woodmont Avenue) in this area are intended to provide station access and facilitate local circulation within the Central Business Districts of Friendship Heights and Bethesda. The recently approved optional method developments in the Bethesda CBD rely upon these roads for acceptable traffic conditions. The MdDOT has programmed the widening of I-495 (Capital Beltway) to eight lanes between Wisconsin Avenue and Georgia Avenue.

Thresholds and the Relationship to Planned Development

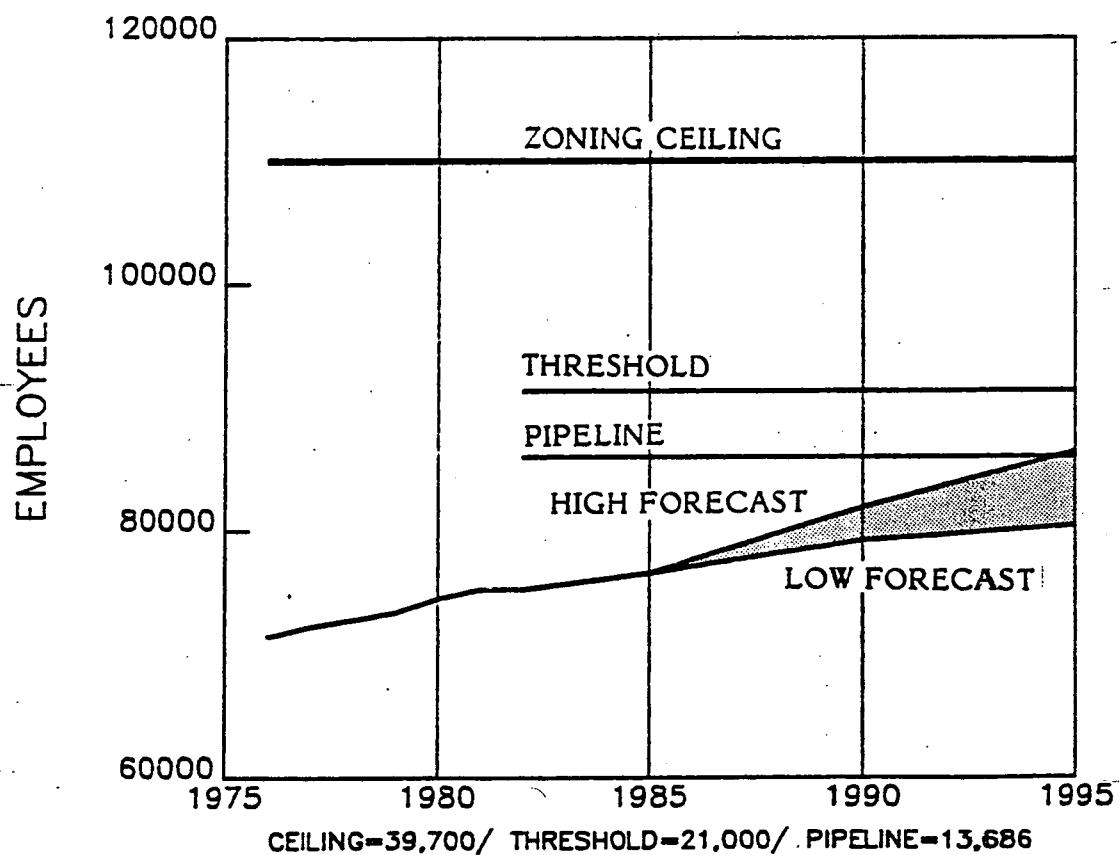
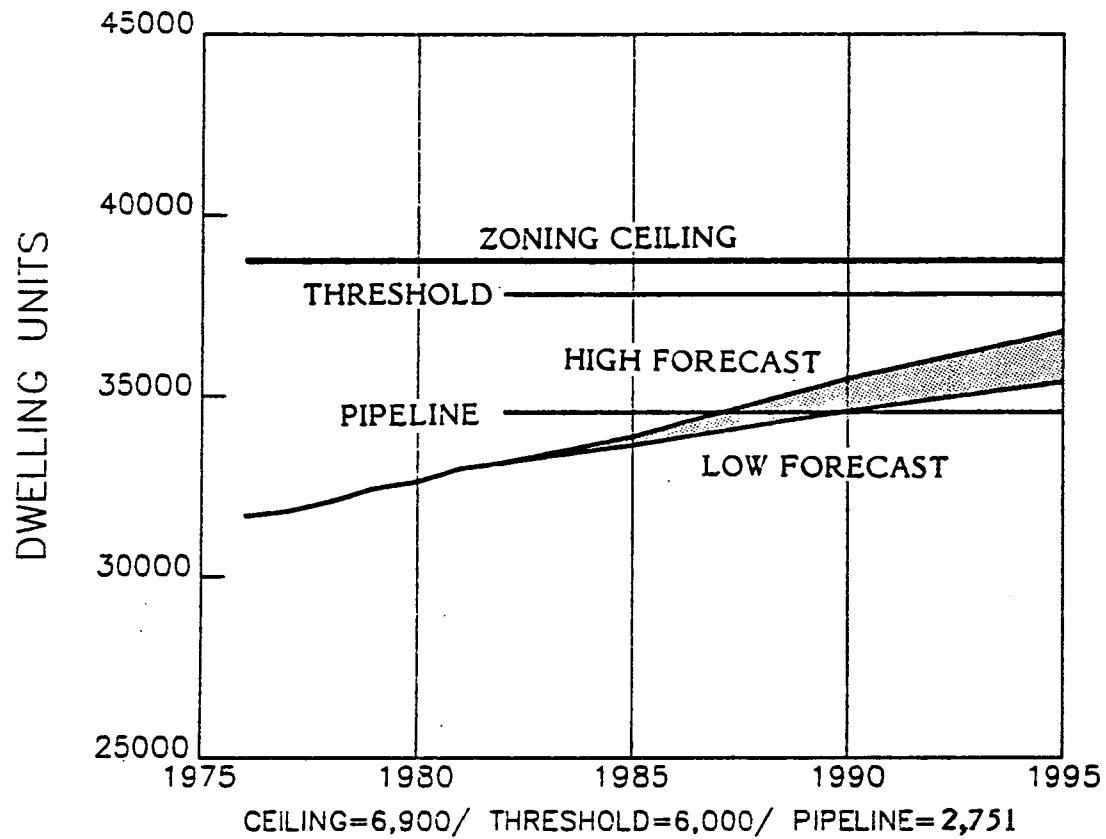
The recommended thresholds for this area are 6,000 dwelling units and 21,000 employees. Subtracting pipeline and growth since 1977 will allow the approval of 2,249 additional dwelling units and about 7,314 employees. The Friendship Heights Sector Plan limits development within that area in absolute terms on a parcel-by-parcel basis. It does not recommend staging or threshold limits, and thus the thresholds do not change the amount or timing of development in Friendship Heights. The thresholds for the Bethesda Policy area do not allow more growth than the recommendations in the Bethesda Sector Plan. (See Bethesda Sector Plan Extract in Chapter V of this document.) Therefore, in the Bethesda Sector Plan area part of the Bethesda Policy Area, local area transportation reviews will not be required.

Considerations for the Future

Areas of Local Congestion: There are several locations within the Bethesda Policy Area for which local area transportation review will be required. Among these are Westbard, Chevy Chase Lake, and Friendship Heights locations.

Recommended Transportation Improvements: The MdDOT has initiated a study of the widening of I-495 (Capital Beltway) between the Potomac River and the I-270 junction. There is the possibility of various local improvements being identified during Local Area Transportation Reviews and further work associated with refinements to master and sector plans in this area.

BETHESDA POLICY AREA



SILVER SPRING/TAKOMA PARK

Existing Conditions

Transit Availability: The Silver Spring/Takoma Park area has better transit availability than any other area in the County. The Metrorail stations at Silver Spring and Takoma Park are supported by an extensive feeder bus system. The MCDOT's Ride-On Buses also provide feeder service as well as community transit service. The area is also well served by regional bus and commuter rail service.

Critical Intersections and Roadway Segments: There are several intersections in this area that are operating at or approaching Level of Service E. Such conditions are found along East-West Highway, on Georgia Avenue in Montgomery Hills, along Colesville Road, and on University Boulevard.

Programmed Transportation Improvements

The MdDOT has programmed the widening of I-495 (Capital Beltway) to eight lanes between Georgia Avenue and Wisconsin Avenue. Other transportation projects in this area are ones intended to facilitate local circulation within the Silver Spring Central Business District (CBD). Construction of the part of the Glenmont Line north of Silver Spring has been underway for sometime. The Board recently determined that only the Wheaton Station should now be considered as programmed within the timeframe of the CIP.

Thresholds and the Relationship to Planned Development

The recommended thresholds for this area have been reduced to 4,000 dwelling units and 14,000 employees reflecting the Board's change in the program status of the Glenmont Line. Approximately 3,040 additional dwelling units and 11,042 employees could receive subdivision approval. Silver Spring is the subject of a joint revitalization program sponsored by the County, the Planning Board, and local groups. Efforts are being undertaken to attract significant new development to the downtown Silver Spring area.

Considerations for the Future

Areas of Local Congestion: There are few locations within the Silver Spring/Takoma Park area for which local area transportation reviews could be expected to be required. Among these are Montgomery Hills and possibly some portions of the CBD.

Recommended Transportation Improvements: There is the possibility of various local improvements being identified during the Local Area Transportation Reviews. In addition, improvements to the transit facilities serving Silver Spring are under study and such improvements could further reduce the potential for too much local congestion.

SILVER SPRING/TAKOMA PARK POLICY AREA

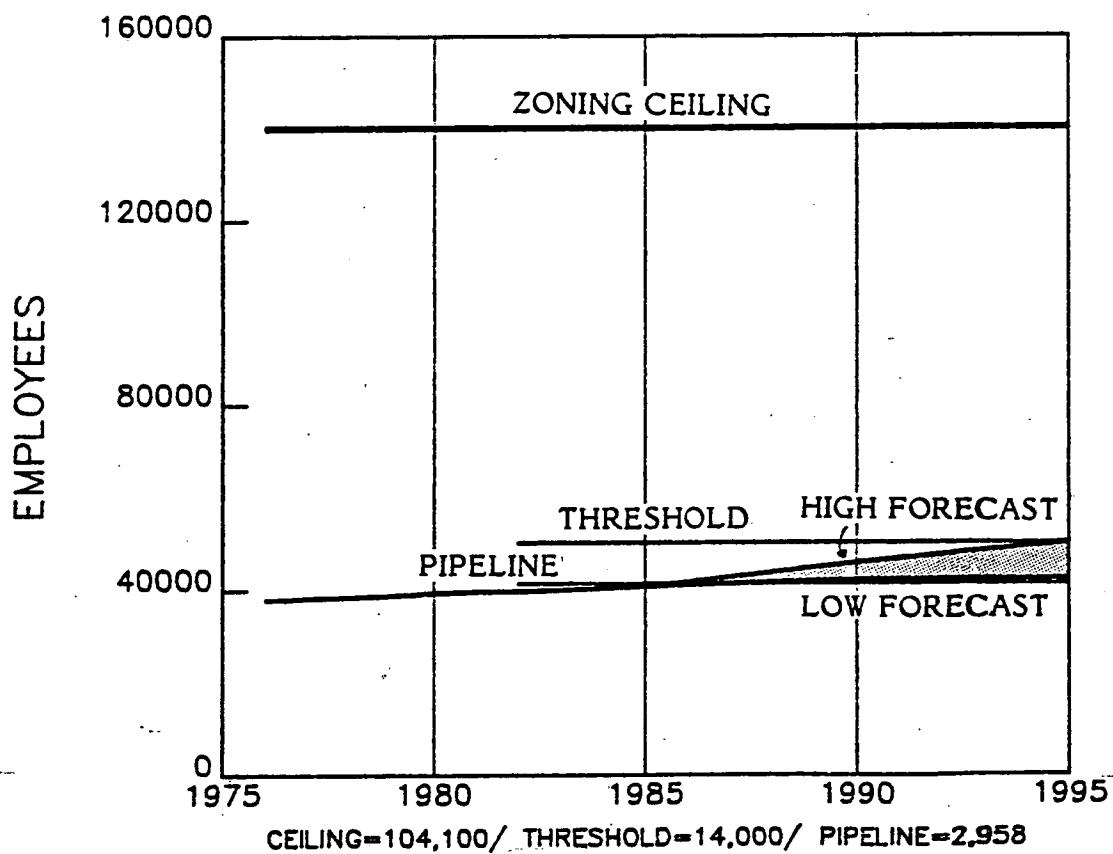
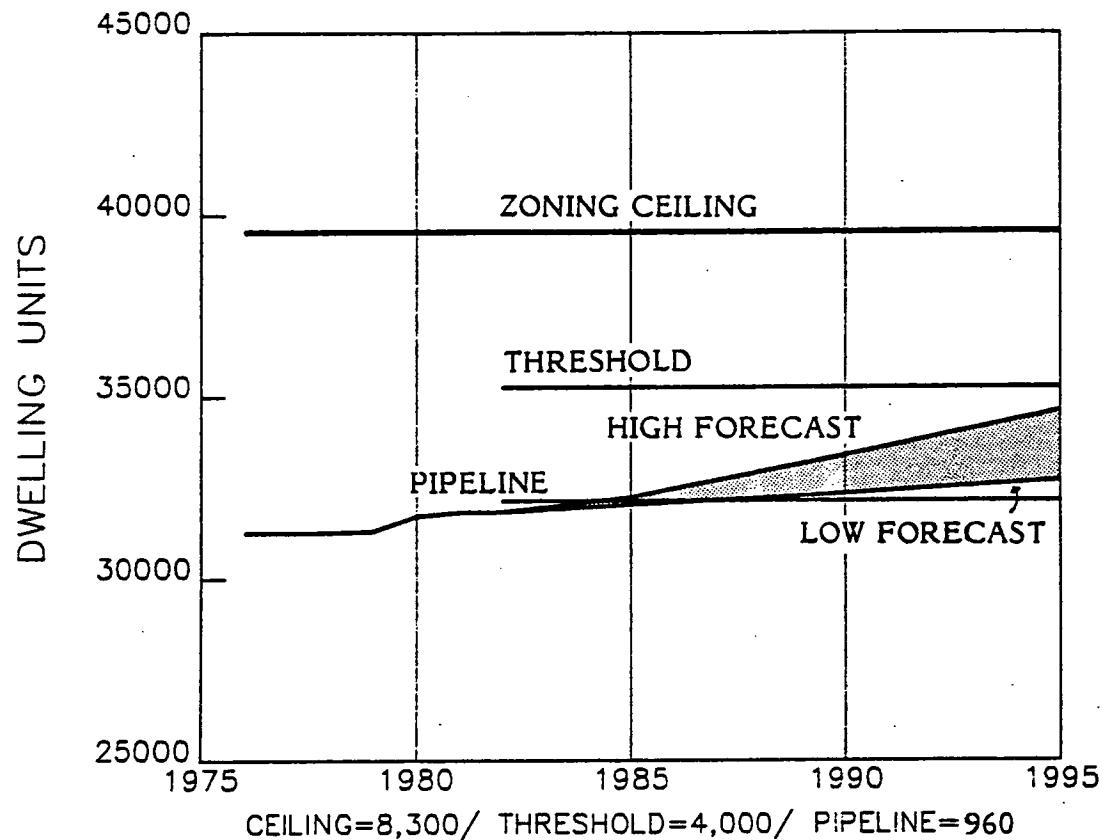


TABLE 5

LISTING OF HIGHWAY PROJECTS BY POLICY AREA WHICH ARE AT LEAST
 FIFTY PERCENT PROGRAMMED FOR CONSTRUCTION IN THE MONTGOMERY COUNTY
 FY 1984-89 CIP OR THE MDDOT FY 1983-88 CONSOLIDATED TRANSPORTATION PROGRAM

OLNEY

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Georgia Avenue	Norbeck Road (MD 28) to MD 108	County/State
Intersection Improvement	Georgia Avenue at Emory Lane	County

GERMANTOWN WEST

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Great Seneca Highway	Middlebrook Road to Darnestown Road (MD 28)	County
Bridge Replacement	Waring Station Road	County

GERMANTOWN EAST

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Intersection Improvement	Germantown Road (MD 118) at Frederick Ave. (MD 355)	County

CLOVERLY

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Bonifant Road	Layhill Road to New Hampshire Avenue	County
Good Hope Road Realignment	To New Hampshire Avenue and New Bonifant Road	County
Intersection Improvements	New Hampshire Avenue/Norwood Road	County

TABLE 5 (Cont'd.)

POTOMAC

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Seven Locks Road Resurfacing and Realignment	MacArthur Boulevard to Lillystone Drive River Road to Greentwig Road	County
Montrose Road Extended	Seven Locks Road to Falls Road	County
Democracy Boulevard Extended	Seven Locks Road to Kentsdale Drive	County

FAIRLAND/WHITE OAK

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Sandy Spring Road (MD 198)	US 29 to I-95	State
East Randolph/East Cherry Hill Road	US 29 to Prince Georges Line	County
Subdivision Participation	New Hampshire Avenue at Lockwood Drive	County/Developer
Columbia Pike (US 29)	Industrial Parkway to Greencastle Road	County/Developer
East Randolph Road	New Hampshire Avenue to Fairland Road	County

GAITHERSBURG

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Quince Orchard Road	Darnestown Road (MD 28) to Clopper Road	State/County/Developer
Frederick Avenue (MD 355)	South Summit Avenue to Chestnut Street	State
I-270 Interchange	West Diamond Avenue (MD 117) to MD 124	State
I-370 Metro Connection	I-270 to Shady Grove to Metro Station	State

TABLE 5 (Cont'd.)

GAIthersburg (Cont'd.)

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Intersection Improvement	MD 28 and Muddy Branch Road	County
Crabbs Branch Way	County Service Park to south of Redland Road	County
Midcounty Highway (formerly Eastern Arterial, in CIP as Evening Star Highway)	Montgomery Village Avenue to Shady Grove Road	County
Fields Road	Piccard Drive to MD 355	County
Fields Road	Muddy Branch Road to Omega Drive	County
Gaither Road	Shady Grove Road to Fields Road	County
Great Seneca Highway	Middlebrook Road to Darnestown Road (MD 28)	County
Longdraft Road	Quince Orchard Road to Clopper Road	County
Omega Drive	Fields Road to Key West Avenue	County
Shady Grove Road	I-270 to Briardale Road	County
Shady Grove Road	MD 28 to I-270	County
Shady Grove Road Bridge & Interchange Improvements	at I-270	County/State
Key West Avenue/MD 28	Shady Grove Road to Darnestown Road/Treworthy Road; widen MD 28 at Shady Grove Road and between Research Boulevard and I-270	County/State/Developer
Watkins Mill Road Bridge	at Whetstone Run	County/City

TABLE 5 (Cont'd.)

GAITHERSBURG (Cont'd.)

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Clopper Road	Longdraft Road to Quince Orchard Road	Gaithersburg
Russell Avenue	Watkins Mill Road to Montgomery Village Avenue	Gaithersburg
Centerway Road Extension	Snouffers School Road to Strawberry Knoll Road	County

NORTH BETHESDA

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Veirs Mill Road Bridge (MD 28)	MD 355 to Woodburg Avenue	State
First Street Extended	MD 355 to Veirs Mill Road	Rockville
Gude Drive Extension	MD 355 to Research Boulevard	Rockville/County
East Gude Drive	MD 355 to Southlawn Boulevard	County
Research Boulevard Connection	to Gude Drive	Rockville
Tuckerman Lane	Old Georgetown Road to MD 355 and Metro Station	County
Transit Access Projects	Several Projects near White Flint and Twinbrook	County
Ritchie Parkway	Seven Locks Road to MD 355	Rockville/County/State/Developer
Aspen Hill Road Extended	Veirs Mill Road to Twinbrook Parkway	County
East Jefferson Street	Montrose Road to Rollins Avenue	County

TABLE 5 (Cont'd.)

KENSINGTON/WHEATON

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Norbeck Road (MD 28)	Bauer Drive to Georgia Avenue	State
Bel Pre Road	Georgia Avenue to Layhill Road	County
Layhill Road	MD 97 (Georgia Avenue) to Argyle Club Road	State
Transit Station Access Projects	Glenmont, Wheaton and Forest Glen Stations	County/State

BETHESDA

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
East-West Highway Cupplet	Wisconsin Avenue (MD 355) to B & O Railroad	State
I-495 Capital Beltway	I-270 to MD 97	State
Transit Station Access and Business District Circulation Projects	Bethesda and Friendship Heights Stations	County

SILVER SPRING/TAKOMA PARK

<u>Roadway Project</u>	<u>Limits</u>	<u>Implementing Agency</u>
Roeder Road	Spring Street to Fenton Street	County
I-495 Capital Beltway	I-270 to MD 97	State

LOCAL AREA TRANSPORTATION REVIEW

1. Introduction

The intent of these procedures in this guideline is to permit the Planning Board to withhold approval of an application, even though it would not exceed the threshold, if it is demonstrated that the development will produce excessive local traffic congestion which is likely to induce a significant detrimental effect on adjacent land use and which is unlikely to be relieved by alternative routes or modes of travel. It is equally important for the Planning Board to use these procedures to help it develop information which can be used to give guidance to the various Capital Improvement Programs of the implementing agencies.

2. Criteria for Screening Cases for Local Area Transportation Review

Planning staff will use the following criteria to determine whether the applicant needs to submit sufficient information and data on the proposed subdivision to carry out a Local Area Transportation Review. To the extent possible, this screening should be carried out prior to a formal subdivision application being submitted to the Development Review Division. It also could be done as part of a preliminary consideration by the Development Review Committee. If the development review staff determines by these screening criteria that a Local Area Transportation Review is necessary, the developer's application will not be considered complete until the appropriate information and data are submitted. There are two exceptions regarding conducting a Local Area Transportation Review:

- 1) The "Bethesda Policy Area" development located within the Bethesda Sector Plan area will be reviewed in accordance with the recommendations of the staging element of the Bethesda Sector Plan, and
- 2) The "Potomac Policy Area" part of the Potomac planning area will be reviewed in accordance with the adopted Master Plan for the Potomac Subregion.

A Local Area Transportation Review is required if the combination of the conditions identified in the following paragraphs is A & B, A & C or all three:

- A. Significantly Sized Project: The proposed development is of sufficient size to have a measurable impact on a specific local area to be considered in a local review. This is taken to mean either a standard of fifty or more dwelling units in the proposed development or a non-residential development which would generate fifty or more peak hour trips according to the appropriate category in the Institute of Transportation Engineers Trip Generation Handbook. It is recognized that in the actual Local Area Transportation Review it could be determined that a trip generation value different from the handbook may be more appropriate. It is presumed that smaller sized subdivisions can only be considered in the area-wide aggregate review of the new overall procedures.

In determining whether or not a total of fifty or more dwelling units or trips are involved for the purpose of applying the requirements of Local Area Transportation Review, all land at one location within the County available for building development under common ownership or control by an applicant,

including that land owned or controlled by separate corporations in which any stockholder (or family of the stockholder) owns ten percent or more of the stock, shall be included. An applicant shall not avoid the intent of this requirement by submitting piecemeal applications or approval requests for subdivision plats, site or development plans, or building permits. Any applicant may submit a preliminary subdivision plat for approval for less than fifty dwelling units or fifty peak hour trips at any one time provided such applicant must agree in writing that upon the next such application, or request, the applicant will comply with the requirements of Local Area Transportation Review when the total number of requests at one location has reached fifty or more dwelling units or fifty or more trips.

The phrase "at one location" means all adjacent land of the applicant, the property lines of which are contiguous or nearly contiguous at any point, or the property lines of which are separated only by a public or private street, road, highway or utility right-of-way or other public or private right-of-way at any point, or separated only by other land of the applicant, which separating land is not subject to the requirements of Local Area Transportation Review at the time of application for preliminary subdivision plat approval.

Plans for more than 50 dwelling units or 50 peak hour trips which cannot pass Local Area Transportation Review may be conditionally approved such that the development which may proceed to record plat will produce less than 50 dwelling units or 50 peak hour trips. When the applicant can demonstrate that the full plan, as submitted, including those lots which have been approved for recording, has adequate public facilities for all facilities, then the remainder of the preliminary plan will be able to obtain record plat approval.

- B. Nearby Congestion: The proposed development is located near roadways, intersections or sets of intersections which are already heavily congested. This is taken to mean a standard of having a critical intersection operating at Level of Service D or lower in the vicinity of the proposed development, or for the development to be located near a roadway segment already identified by the Planning Board for consideration by the State or County for widening and/or upgrading. The Transportation Planning Division is maintaining an Intersection Level of Service Inventory based upon traffic counts collected primarily by the MCDOT. The inventory gives the most congested level of service conditions for a one hour period either in the A.M. or P.M.. In addition, the SHA periodically conducts aerial surveys which develop estimates of level of service conditions along major state highways, as well as their interchanges or intersections. The Planning Board periodically gives recommendations to both the SHA and the MCDOT regarding specific segments of existing roadways in need of widening or upgrading, as well as roadways on new locations. The most recent set of Planning Board recommendations will be used in this screening process.
- C. Development Level Approaching the Threshold: When the proposed development is added to: (1) completions since the threshold base year; and (2) outstanding sewer authorizations; and when the resulting total development is within 5 percent of the approved threshold for the area, this condition for a local area review is met. As an example, if the threshold for an area is 2,000 households, and if the sum of the housing completion, outstanding sewer authorizations, and the proposed subdivision is greater than 1,900, then this condition is met.

3. Findings for Inadequate Facilities

The Planning Board staff report will present findings for each of the categories identified below and give a recommendation relating to the adequacy of the transportation facilities. The Planning Board will use these findings to make its overall findings as to adequacy of public facilities for the proposed development.

- A. **Transportation Solutions:** Staff will identify the degree to which there are remedial transportation solutions to obtain adequate local transportation capacity. These solutions can include additional traffic engineering or operating changes beyond those currently programmed, major capital improvements beyond those currently programmed, or non-programmed transit or ridesharing activities which would make the overall transportation system adequate.
- B. **Degree of Local Congestion:** Staff will identify the degree of congestion forecasted for both A.M. and P.M. peak hours. Staff will present findings of the degree to which the forecasted traffic exceeds the maximum capacity of the nearby road system. The mid-point of Level of Service E is presumed the condition under which the transportation facilities as a total system are operating at maximum capacity. Critical Lane Volumes higher than the mid point of Level of Service E are deemed to reduce the overall efficiency of the road network. Because the experience of congestion is felt by road users and adjacent land uses before this level is reached, a judgement must be made in each case regarding the degree of detrimental impact that can be tolerated. The degree of local congestion will be considered to be more severe if both the A.M. and P.M. peak hour traffic conditions are beyond the mid point of Level of Service E.

If an applicant agrees to construct a roadway project or provide a transit program which would result in the operating conditions (as measured by critical lane volume) being better than the conditions that would occur without the applicants project, then local congestion will be considered less severe even though the calculated level of service does not meet the standard of acceptability.
- C. **Unavoidable Congestion:** Staff will identify the degree to which there are alternate routes or paths to serve the traffic associated with the proposed development. If there are no appropriate alternate routes for that traffic to use to avoid the congestion, then it must be assumed that traffic from the proposed development will increase the local area congestion. It is not appropriate to anticipate that the traffic associated with the development would use local streets unless those streets have been functionally classified as being suitable for handling that generated traffic.
- D. **Transit Unavailability:** Staff will identify the degree to which transit or ridesharing activities are not available to serve the proposed development. If it is physically or fiscally ineffective for the public agencies to provide transit or ridesharing services, then the local congestion, likely to be caused by the proposed development, cannot be significantly absorbed through this alternative mode of travel. If there is sufficient potential for serving the proposed development with transit or ridesharing services, then it is possible that a transit alternative could be developed for modifying the demand contributing to the severe congestion.

E. Project Related Traffic: Staff will identify the degree to which the congestion problem is directly attributable to the proposed development. Traffic from three sources will be measured: (1) existing traffic, (2) traffic which would be generated by the sum total of all outstanding but unbuilt record plats,* and (3) traffic which would be generated by the proposed development itself. The more that traffic from the proposed development contributes to the congestion problem, the greater the severity of the local impact.

4. Method and Preparation of Local Area Transportation Review

The following general criteria and analytical techniques are to be used by applicants in submitting sufficient information and data on a proposed subdivision to demonstrate the expected impact on and use of public roadways by the residents or occupants of said subdivision. In addition to the consideration of existing traffic associated with present development, the applicant shall include in the analysis potential traffic which will be generated by his subdivision and other "nearby" recorded lots to be included in the analysis. Information and data on the other "nearby" recorded lots will be supplied to the applicant during the initial review at the Subdivision Review Committee meeting. At this or at a subsequent meeting with transportation staff, the following aspects of the traffic impact analysis will also be agreed upon:

- 1) which intersections are to be included in the traffic impact analysis;
- 2) adequacy of available turning movement counts and need for additional data;
- 3) period of analysis (A.M. or P.M. or both);
- 4) trip generation rates, especially for commercial development;
- 5) directional distribution of site-generated and platted traffic;
- 6) mode split assumptions;
- 7) programmed projects to be considered in the analysis, along with techniques for estimating traffic diversion to major new programmed facilities;
- 8) link adequacy and trends in traffic growth; and
- 9) feasible range of traffic engineering improvements associated with implementing the development.

A. Trip Generation: Trip generation rates for residential development are shown in the accompanying table. Rates for other land uses or zoning classifications can be obtained from sources such as recent compilations assembled by The Institute of Transportation Engineers and will be provided by the Transportation Planning Staff of the Planning Board. Generated trips for development of mixed land uses will be determined by combining the trips generated by each of the component uses in the mix. Where it can be demonstrated that peak hours for different land uses occur at different times, the single hour that results in the highest total volume on the street system will be controlling.

B. Peak Hour Percent: A peak hour percent of 10 percent of the daily trips will be assumed for residential development. For other uses, information from other accepted sources such as the Institute of Transportation Engineers (ITE) publications will be utilized as agreed upon by the staff and applicant.

* Note that the Local Area Review counts Record Plats rather than Sewer Authorizations. This is due to cost and difficulty of securing sewer authorization data on a weekly basis from the WSSC. Staff will consider, as a judgmental factor, the relative relationship between plats and authorizations as of the last previously recorded comparison.

Housing Type	Zoning Categories	TRIP Generation Rates
High-Rise Apt.	RH, R-10	5 to 7 trips/day/dwelling unit
Townhouses	RT	6 to 8 trips/day/dwelling unit
Garden Apt.	R-20, R-30	6 to 8 trips/day/dwelling unit
Single-Family	All other residential classes	8 to 10 trips/day/dwelling unit

- C. Peak Hour: The applicants shall use the peak one hour period which occurs during either the 7-9 A.M. or 4-6 P.M. periods or both, as agreed to by the staff and applicant.
- D. Trip Distribution: The directional distribution of the generated trips entering and leaving the proposed subdivision via all access points must be justified by the relative locations of other traffic generators (i.e., employment centers, commercial centers, regional or area shopping centers, transportation terminals, etc., and/or the trip table information provided by staff). These same factors or other factors provided by the Subdivision Review Committee shall be applied to the development under study as well as to other "nearby" subdivision plans in their analyses.
- E. Directional Split: Trips generated by residential uses will be assumed to have 60-70 percent leaving and 30-40 percent entering the proposed subdivision during the morning peak and 60-70 percent entering and 30-40 percent leaving the proposed subdivision in the evening peak. The split for traffic associated with other land uses is to be derived from ITE published information or other accepted studies, as determined by the transportation planning staff and the applicant.
- F. Trip Assignment: The distribution factors shall be applied to the generated trips and the resulting traffic volumes assigned to the road network providing access to the proposed subdivision plus existing and "nearby" future traffic to determine the impact on the adequacy of the transportation facilities. The assignment is to be extended to the nearest major intersection, or intersections, as determined by the Subdivision Review Committee and can include an evaluation of the impact of generated traffic on existing links.
- G. Critical Lane Analysis: At the identified major intersection, or each such intersection, the existing and generated traffic is to be related to the adequacy of the intersection by using the "Critical Lane Volume" technique (see Section J) which shall be updated to maintain consistency with the Highway Capacity Manual revisions. Link volume analysis shall also be related to Highway Capacity Manual standards. The analysis should be carried out for both the A.M. and the P.M. peaks and should use traffic data for non-holiday weekdays. If so desired, alternate capacity and level of service analysis techniques can be used to develop supplemental information.

H. Traffic Data:

1. Traffic volume data is available from either the Maryland Department of Transportation or the Montgomery County Department of Transportation.
2. Data should be adjusted to the current year or new counts should be made by the applicant if, in the opinion of staff, traffic volumes have increased due to some change in the traffic pattern, such as the completion of a development project after the count was made.
3. If turning movement data is older than three years, or if there are locations for which data is non-existent, data must be acquired by the applicants using their own resources. This is in accordance with the Ordinance and part of the applicant's submission of sufficient information and data, consistent with the decisions reached by the Subdivision Review Committee and Transportation Planning Staff.
4. Intersection traffic counts conducted by the applicant must be manual turning movement counts covering the periods of 7-9 AM and 4-6 PM so as to allow selection of the peak hour within the nearest thirty minutes (e.g., 4:00-5:00, 4:30-5:30, or 5:00-6:00). Inclusion of all 7-9 AM and 4-6 PM turning movement data is required to be submitted as part of the applicant's traffic impact analysis.

I. Adequate Accommodation of Traffic: The ability of a highway system to carry traffic is expressed in terms of "Service Level" at the critical locations (usually intersection). "Service Level" is defined alphabetically as follows:

- "A" Conditions of free unobstructed flow, no delays and all signal phases sufficient in duration to clear all approaching vehicles.
- "B" Conditions of stable flow, very little delay, a few phases are unable to handle all approaching vehicles.
- "C" Conditions of stable flow, delays are low to moderate, full use of peak direction signal phase (s) is experienced.
- "D" Conditions approaching unstable flow, delays are moderate to heavy, significant signal time deficiencies are experienced for short durations during the peak traffic period.
- "E" Conditions of unstable flow, delays are significant, signal phase timing is generally insufficient, congestion exists for extended duration throughout the peak period.
- "F" Conditions are jammed, full utilization of the intersection approach is prevented due to back-ups from locations downstream.

The following chart indicates the "Critical Lane Volume" ranges to be used in determining "Service Level" for an intersection. Service level volumes for roadway

sections and ramps are described in sections eight through ten of the Highway Capacity Manual. ("The Critical Lane Volume" technique is described in Section J.)

Intersection Levels of Service by Critical Lane Volume Ranges

<u>977 or less</u>	<u>1023 to 1127</u>	<u>1173 to 1277</u>	<u>1323 to 1427</u>	<u>1473 to 1577</u>	<u>1623 or more</u>
A	A/ ₃ B	B/ _C C	C/ _D D	D/ _E E	E/ _F F
978 to 1022	1128 to 1172	1278 to 1322	1428 to 1472	1578 to 1622	

J. "Critical Lane Volume" Technique: A technical description of the "critical lane volume" technique is given in the January 1971 issue of Traffic Engineering magazine.* The following step-by-step procedure should be sufficiently descriptive to enable the applicant to utilize the technique at simple two-phase or unsignalized intersections.

The peak hour approaching traffic volume and turning movements for the intersection being analyzed will be determined in the traffic generation and trip distribution phase of the analysis. At unsignalized intersections, a two-phase operation should be assumed.

The following is a step-by-step description of how to determine the Level of Service (LOS) for an intersection.

- Step 1. Note the number of approach lanes from each direction.
- Step 2. Subtract from the total approach volume any right turn volume that operates continuously throughout the signal cycle. (i.e., a free right turn by-pass)
- Step 3. Determine the maximum volume per lane from each approach using the following table. (Note: Do not count lanes established for exclusive use such as left turn storage lanes - the lane use factor for exclusive use lanes is 1.00)

<u>Number of Approach Lanes</u>	<u>Lane Use Factor</u>
1	1.00
2	0.55
3	0.40
4	0.30

* New methods for doing a critical lane summation analysis are proposed in Transportation Research Board (TRB), Circular 212. These guidelines may subsequently be amended to incorporate those new procedures once they are adopted.

Step 4. Select the maximum volume per lane in one direction (e.g., northbound) and add it to the opposing (e.g., southbound) left turn volume.

Step 5. Select the maximum volume per lane operating in the opposite direction of the approach selected in Step 4.

Step 6. The maximum total of Step 4 or Step 5 will be the "critical" volume for phase one (e.g., north-south).

Step 7. Repeat Steps 4 through 6 for lanes operating in phase two (e.g., east-west).

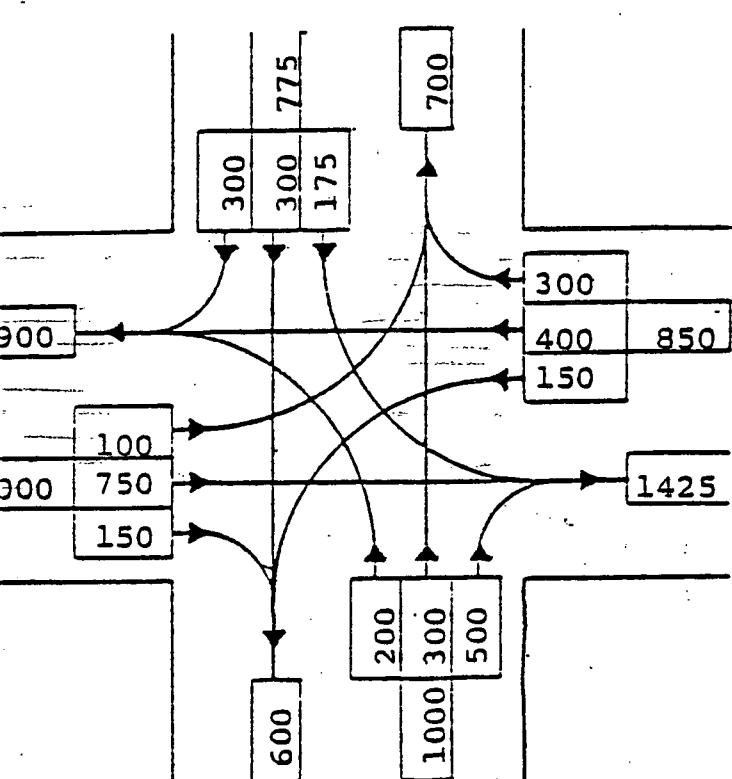
Step 8. Sum the "critical" volumes for each phase.

Step 9. Compare the resultant "Critical Lane Volume" for the intersection with the range table on page .

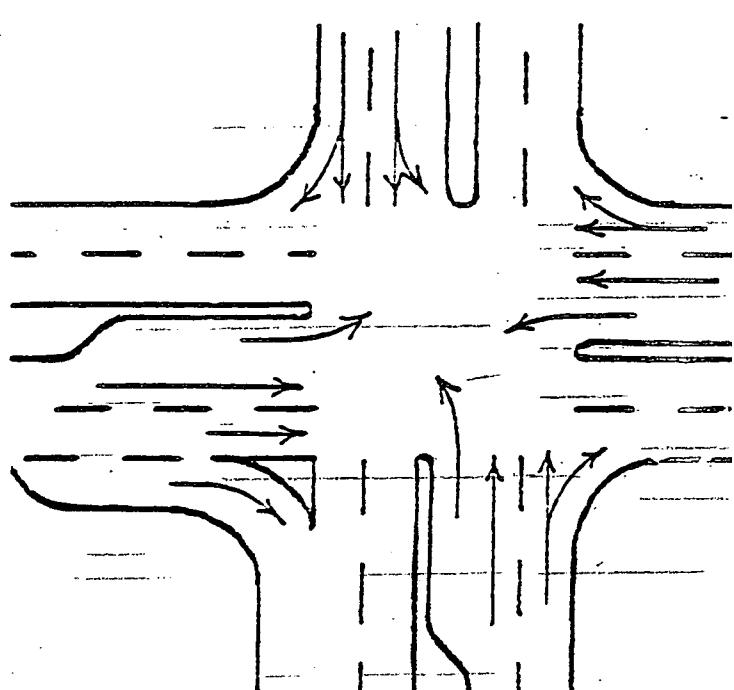
If the intersection under consideration is a complex one with special conditions such as phasing lags, leads, or overlaps, application of the "Critical Lane Volume" technique may require professional assistance such as the aid of consultant traffic engineers or staff from the Maryland Department of Transportation or the Montgomery County Department of Transportation.

"Critical Lane Volume" Technique Example

TURNING VOLUMES



INTERSECTION GEOMETRICS



<u>From</u>	<u>Approach Volume</u>	<u>Lane Use Factor</u>	<u>Critical Approach Volume</u>		<u>Opposing Lefts</u>		<u>Critical Lane Volume Per Approach</u>
N	775 ⁽¹⁾	0.55	426	+	200	=	626
S	800 ⁽²⁾	0.55	440	+	175	=	615
S OR	500	1.00	500	+	175	=	675*
E	700 ⁽³⁾	0.55	385	+	100	=	485
W	750 ⁽⁴⁾	0.55	412	+	150	=	562*

*"Critical Lane Volume" = 675 + 562 = 1,237 vph.

1,237 represents Service Level C (from table on page 49).

- (1) Approach volume sum of throughs, rights and lefts in two lanes.
- (2) For a heavy right turn must evaluate worst of rights in one lane or throughs and rights in two lanes.
- (3) Approach volume sum of throughs and rights in two lanes.
- (4) Approach volume is through only because of free right and separate left.

K. Items that must be submitted as a part of the Local Area Transportation Review: In an effort to standardize what information is submitted in a Local Area Transportation Review, the following must be submitted before the preliminary plan application is considered complete when this review is required.

1. A site or area map showing existing roads in the area.
2. The location on the site map of "programmed" highway improvements, if any, that are in the County's Capital Improvements Program (CIP) or the State's Consolidated Transportation Program (CTP), which would affect traffic at the critical intersection(s) to be studied provided that they are scheduled for at least 50 percent of their construction costs to be expended within the program period of the adopted CIP or CTP.
3. Existing A.M. and P.M. peak traffic count summaries for all "nearby" critical intersections.
4. "Nearby" recorded subdivisions that would affect traffic at the critical intersection(s), with their location shown on the area map.
5. A table giving A.M. and P.M. peak hour traffic generated by all "nearby" recorded but unbuilt subdivisions showing the generation rate for each type of subdivision.
6. A.M. and P.M. peak hour traffic generated by the proposed subdivision proportioned to the traffic entering and leaving the site.

7. Trip distribution pattern, in percent, for the "nearby" recorded subdivisions during the A.M. and P.M. peak hour, with the pattern being shown on an area map.
8. Trip distribution pattern, in percent, for the proposed subdivision during the A.M. and P.M. peak hours, with the pattern being shown on an area map.
9. Maps which show separately and in combination:
 - (a) Existing A.M. and P.M. traffic volumes assigned to the affected highway system.
 - (b) Projected A.M. and P.M. traffic volumes assigned to the affected highway system for all "nearby" recorded subdivisions.
 - (c) Projected A.M. and P.M. traffic volumes assigned to the affected highway system for the proposed subdivision.
10. Any study performed to help determine how to assign recorded or proposed development traffic, such as a license plate study or special turning movement counts, should also be supplied.
11. Copies of all critical lane analyses, showing calculations for each approach, should be included.
12. A listing of all transportation improvements, if any, that the developer agrees to provide.

GLOSSARY OF SELECTED TERMS AND ABBREVIATIONS*

APFO and APF: (Adequate Public Facility Ordinance)

An element of the Subdivision Ordinance which requires the Planning Board to make a finding that existing or programmed public facilities are adequate before they can approve a preliminary plan of subdivision.

ADT: (Average Daily Traffic)

The number of vehicles travelling on a segment of roadway during the 24 hours of an average weekday.

CIP: (Capital Improvements Program)

Each year the Montgomery County Executive prepares and the County Council adopts a six year program for capital expenditures to expand and/or renovate Montgomery County's public facilities.

CPP: (Comprehensive Planning Policy)

The abbreviated designation for this annual report.

CTAC: (Citizens Technical Advisory Committee)

This is a committee of citizens and building industry representatives appointed by the Planning Board, plus ex-officio representatives from the County Executive staff. The CTAC has responsibility for reviewing the CPP and also for disseminating information concerning the Planning Board's administration of the APFO.

CTP: (Consolidated Transportation Program)

The transportation capital improvements program annually adopted and administered by the State of Maryland.

CSP: (Comprehensive Staging Policy)

The designation previously used to describe APF changes recommended by the Planning Board to the County Council in 1979. The CSP has been incorporated within the APF guideline changes included in the Staging Chapter of this CPP.

GROWTH POLICY

The aggregation of adopted public policies which control the location, scale, type and timing of development within the County. CPP materials reflect integral and essential aspects of Montgomery County's growth policy.

LAR: (Local Area Review)

The portion of the Staging Chapter which requires small scale review and evaluation of a particular area of the County in order to determine whether there are Adequate Public Facilities to serve a particular subdivision.

* (See page 9 for terms related directly to staging issues; Programmed Facility, Sewer Authorization/Pipeline, Staging Policy Area, Threshold).

LOS: (Level of Service)

A description of the quality of performance of a facility given the demands being placed upon that facility; mostly used in this report in terms of transportation facilities which reference an A to F quality scale. This is nationally accepted scale used to describe the quality of roadway service.

MdDOT: (Maryland Department of Transportation)

The State of Maryland arm government responsible for planning and implementing the improvements to those elements of the transportation system which are the administrative responsibility of the state.

II
ENVIRONMENT

COMPREHENSIVE
PLANNING
POLICIES

STORMWATER MANAGEMENT

Introduction

The purpose of this section is to provide a general overview of stormwater management (SWM) principles and practices, specifically those applicable to Montgomery County. A planning level attempt has been made to identify problem areas and recommend priority areas that would assist the Department of Environmental Protection (DEP) in programming SWM facilities.

Flood and Runoff Control

Excessive runoff can inundate stream valleys and cause flooding and erosion conditions. A traditional corrective approach to this flooding problem has been the construction of impoundments and improvement of stream channels. Despite these control mechanisms, nationwide flood losses have continued to escalate. In Montgomery County, flood losses have been minimal.

In the past decade, planners and engineers have turned to alternative control strategies. Instead of using dams and levees to correct an existing flooding situation, more emphasis is being given to preventative measures such as land use planning, stream valley acquisition, flood insurance and public information.

Retention of stream valleys in their natural state with substantial vegetative coverage not only allows increases in retention and absorption of rainwater runoff, but it also provides an invaluable natural resource for supporting a diversity of flora and fauna. Not only is the natural habitat preserved, but so is part of the community's history. Previous development along the stream banks often reflects the community's development, with its presence of mills and residences.

In unstable areas with exposed soils and steep slopes unprotected by vegetation, excessive rainfall can dislodge and carry significant quantities of soil into watershed streams. This process is known as erosion and sedimentation. In watershed areas impacted by urban development, where the natural runoff/absorption equilibrium has been upset, conservation techniques must be adopted to control excessive stormwater runoff, erosion and sedimentation, and facilitate recharge of the groundwater table and protect water quality.

Control of Stormwater Runoff Quality

An additional challenge is the control of the quality of stormwater runoff. The runoff from agricultural land generally contains fertilizers, pesticides, soils, and livestock wastes. Runoff from urbanized areas frequently carries oil, grease, and heavy metals from roadways; nutrients from lawn fertilizers; dog and cat droppings; and at times untreated sewage from leaking sanitary sewers. Once washed into a receiving stream, all of the preceding substances in varying concentrations become instream polluting agents. A brief discussion of managing the water quality aspect of stormwater runoff is included in the following sections.

Watershed Management in Montgomery County

The preservation and conservation of stream valleys was established as stated County policy, with the creation of M-NCPBC in 1927. In pursuit of this goal, the County has invested heavily in stream valley acquisition. This has been a successful effort, effectively serving the several objectives of watershed management, e.g., flood prevention, sediment and erosion control, enhancement of water quality, and provision of recreational areas. Both Lake Needwood and Lake Frank are successful examples which provide flood control and recreational benefits in the Rock Creek Park area.

Passage of the 1969 Water Pollution Control Act and its ensuing amendments brought focus upon the concept of basin-wide water quality planning. Montgomery County was one of the national leaders in endorsing and advancing the total watershed concept.

In early 1970, the Planning Board authorized a series of technical watershed studies whose coverage included inventories of their flora, fauna, wetlands, and historical sites and which also identified environmentally sensitive areas. Studies for all of the County's "urbanizing basins,"—Seneca, Muddy Branch, Rock Creek, Cabin John, Rock Run, Little Falls, and Anacostia--were completed first. On the basis of these technical studies, functional watershed plans have subsequently been completed for the Seneca, Muddy Branch, and Rock Creek basins.

The foregoing represent the major County watersheds which are most substantially impacted by urban development. Counterpart study and analysis must now be undertaken for the smaller tributaries where additional development is occurring or will take place.

A Multi-Agency Responsibility

Responsibility for comprehensive Stormwater Management (SWM) in Montgomery County is shared by several agencies. The following identifies these agencies and their major responsibilities:

Soil Conservation District (County)

1. Approval of the grading, erosion, and sediment control plans.
2. Approval of stormwater management control waivers.
3. Approval of small pond design plans.
4. Approval of individual subdivision SWM plans.
5. Formulation of SWM design standards and criteria.

Department of Environmental Protection (County)

1. Maintenance of County SWM facilities.
2. Execution of Maintenance and Inspection Agreements with individual private developers.
3. Obtain cash, corporate bond, or irrevocable letter of credit from private developers for the faithful performance of soil erosion, sediment, and water control elements.
4. Inspection of SWM projects.
5. Design and construction of SWM projects.

6. Preparation of the stormwater section of the Ten Year Comprehensive Water Supply and Sewerage Systems Plan, including recommended policies to attain desired water quality standards and objectives.
7. Review and approval of subdivision SWM plans. (Lots of more than two acres are exempt from this review.)
8. Negotiating and approving monetary contributions, easement agreements, land dedications, and provision of a SWM facility in lieu of on-site improvements and controls.
9. Establishment of a waiver fee schedule.
10. Participation in project review concerning nature and extent of on-site requirements.
11. Enforcement of grading and sediment control plans.
12. Authority for and responsibility of carrying out state regulations with regard to water quality, including sediment control.
13. Monitoring of Flood Insurance Program.

Department of Transportation (County)

1. Maintenance of storm sewers.
2. Storm drainage network and culverts.
Design, construction, and approval.
3. Maintenance of culverts and outfalls on County roads.
4. Construction of major impoundments in cooperation with the County DEP.

Department of Natural Resources/Water Resources Administration (State)

1. Approval of SWM and erosion and sediment control ordinances.
2. Review and approval of permits required to construct, reconstruct, repair or alter a dam or reservoir, or to change in any manner the course, current, or cross-section of a stream or body of water within the state (except tidal waters), including any changes to the 100-year frequency floodplain of free flowing streams.
3. Review on a triannual basis, the SWM and erosion and sediment control programs and determine their acceptability.

Montgomery County Planning Board/M-NCPPC

1. Preparation of functional master plans, master plans, and sector plans.
2. Review of subdivision and site plans and their approval.
3. Review of proposed zoning changes in local map amendments and project development plans.
4. Maintenance of dedicated SWM facilities on park properties.
5. Design, construction, and maintenance of SWM structures on park properties.
6. Land acquisition, easements, or dedications with regard to construction and maintenance of SWM facilities described above.
7. Maintenance of stream valley parks.
8. Review and recommendation of CIP projects, Ten-Year Water Supply and Sewerage Systems Plan, SWM rules and regulations and waiver fees.
9. Approval of Stormwater Management/Sediment Control/Storm Drainage plans for facilities located on existing or dedicated parks or impacting parks due to subdivision development process.
10. Maintenance, improvements, and protection of streams within stream valleys.

Major Problems, Sedimentation/Erosion and Water Quality

Watershed studies and the extensive floodplain delineation by the Planning Board validate the significance of subdivision regulations, zoning ordinance, and the stream valley acquisition program. These policies have helped to minimize flood damage. The number of dwelling units within the one hundred year floodplain is relatively few in comparison to other urbanizing areas.

Four areas of significant flooding exist in Montgomery County:

- Town of Seneca (at the mouth of Seneca Creek).
- Rock Creek.
- Turkey Branch at mouth (tributary of Rock Creek).
- Turkey Branch at the vicinity of Georgia Avenue.

Of these areas, flooding at the mouth of Seneca has to do more with the backwater from the Potomac as compared to an increase in peak flow from urbanization.

The County Department of Environmental Protection has an active CIP project to correct these and other flooding problems. The County has also received funds from the State of Maryland through the Flood Management Program to reduce flooding in the Turkey Branch subwatershed. The County DEP also administers the National Flood Insurance Program.

The technical analysis indicates that if the present subdivision, zoning and acquisition policies are continued, no significant county-wide flooding problems are anticipated. The Board has developed floodplain maps for major streams. This information is regularly used in subdivision and site plan review as well as in the stream valley acquisition program. This coverage should be gradually increased to include smaller tributaries.

There are numerous bridges and culverts that are inundated by less severe storms, such as the ten-year storm. A ten-year storm is defined as a storm which occurs on the average of once every ten years. These structures have been identified in the technical reports. A separate map showing impacted dwelling units, bridges and culverts is part of this document.

Localized flooding due to poor design of drainage systems or poor construction practices is not uncommon. However, these problems should be considered on a case-by-case basis.

Sedimentation, erosion and non-point source pollution continue to be the major County-wide problems.

The developed/developing watersheds have caused, and are causing, moderate to severe channel erosion in the streams. To stop further erosion, the Parks Department has developed a CIP program for stream protection in which the stream banks are stabilized with heavy rip rap (stone). This has proved to be an effective method in controlling channel erosion of streams in urbanized/urbanizing watersheds.

Montgomery County's existing stormwater policy requires every land developer to provide for on-site stormwater management, unless upon written request, the Montgomery Soil Conservation District grants a waiver from the on-site control. The District has developed a policy that requires a two-year post-development stormwater runoff from a development site to be released at a rate equal to or less than that experienced if the land was in an undeveloped condition during a two-year storm.

The duration and intensity of a two-year storm is sufficient to inundate stream banks and cause channel erosion. A number of techniques and procedures are available to provide such protection. These include infiltration trenches, grass swales, and retention/detention ponds.

From a purely environmental perspective, it is most desirable to control runoff at the site. Montgomery County, in the early stages of its SWM program, advocated this approach. However, the excessive costs and the practical difficulties of maintaining on-site controls, such as numerous small ponds and infiltration trenches in urban neighborhoods, forced the County to seek alternative, centralized facilities.

Although major centralized facilities are cheaper to maintain, they only control downstream stretches of a stream system. It is also difficult to find a suitable location for these facilities and program them for construction, synchronizing this provision with the progress of neighborhood development.

The functional plans have recommended a combination of measures ranging from land use planning to on-site/centralized facilities for the Seneca, Muddy and Rock Creek basins.

More Stringent State Controls

New State of Maryland regulations have swung the pendulum back to more decentralized SWM approaches and strategies. Also, the new state regulations introduce greater stringencies.

For example, the state establishes both two- and ten-year storm controls, as compared to the less severe two-year control of the County. The new state policy states a preference for such decentralized on-site controls as infiltration ditches, swales, and porous pavements over the retention/detention ponds of a more centralized strategy. It also requires that proposed centralized facilities must be justified with the Water Resources Administration for facilities having contributary drainage area greater than four hundred acres or if the facilities are located to discharge to Class III Natural Trout Waters identified in COMAR 10.05.01.02I.

Planning Board Studies

To meet the new state challenges, the Planning Board has undertaken a comprehensive study to identify hydrologic segments that require SWM planning and implementation. On the basis of study findings and also taking into account current and planned development trends, the Planning Board established area priority rankings in order to select and obtain the most effective and timely CIP project stagings.

The geographic units designated for these priority rankings are the same as the hydrologic segments¹ defined in the Planning Board's previous technical studies. Three separate priority categories have been established, as follows:

Priority 1 (high): A CIP project within 1-3 years is recommended.

Priority 2 (medium): A CIP project within 4-6 years is recommended.

Priority 3 (low): No CIP project is needed.

More detailed site-specific engineering analyses will be required by the County DEP in order to identify specific sites for multi-purpose SWM facilities. The limited availability of such sites has already been recognized as a major constraint upon effective SWM program implementation.

Methodology Employed for Selection of Stormwater Management Priority Areas

The following describes the Planning Board's methodology employed for the selection and location of centralized SWM facilities. (Note: antecedent technical reports provide a more detailed description of the analytical data base.)

There are eleven major watersheds in Montgomery County, as shown in Table 6. The Monocacy River, Little Monocacy River and most of the Patuxent River watersheds were not included in this analysis. Almost all of the Monocacy River, Little Monocacy River and Patuxent River watersheds are designated for agricultural or rural residential uses. These land uses do not generate large volumes of runoff; thus the use of centralized facilities would not be cost-effective. Only the headwaters of three Patuxent River tributaries--Reddy Branch, James Creek, and an unnamed tributary with headwaters near Damascus--are zoned for commercial and medium to low-density residential. These subwatersheds were the only areas in the Patuxent River watershed included in this analysis.

The County DEP has conducted SWM investigations in the subwatersheds of Cabin Branch, Whetstone Run, Magruder Branch (all tributaries of Great Seneca Creek), Shady Branch (tributary of Muddy Branch), Crabbs Branch, Turkey Branch (tributaries of Rock Creek) and Ken Branch (tributary of Cabin John Creek). Hence, these subwatersheds were not included in this analysis. However, sites (if any) recommended for centralized SWM facilities upon review of DEP reports are placed in Priority 1, together with those selected as a result of this analysis. A separate map shows the recommended priority areas.

¹ Areas within a given watershed which are nearly homogenous in characteristics such as land uses, soil type, slope, and area.

TABLE 6
WATERSHEDS WITHIN MONTGOMERY COUNTY

Watershed	Area (Square Miles)
Seneca Creek	128.0
Rock Creek	61.0
Muddy Branch	19.0
Cabin John and Minnehaha Branch	26.3
Rock Run	5.0
Little Falls	7.0
Anacostia	58.0
Patuxent	61.7
Monocacy	23.9
Little Monocacy	18.2
Watts Branch	22.2

Factors Considered

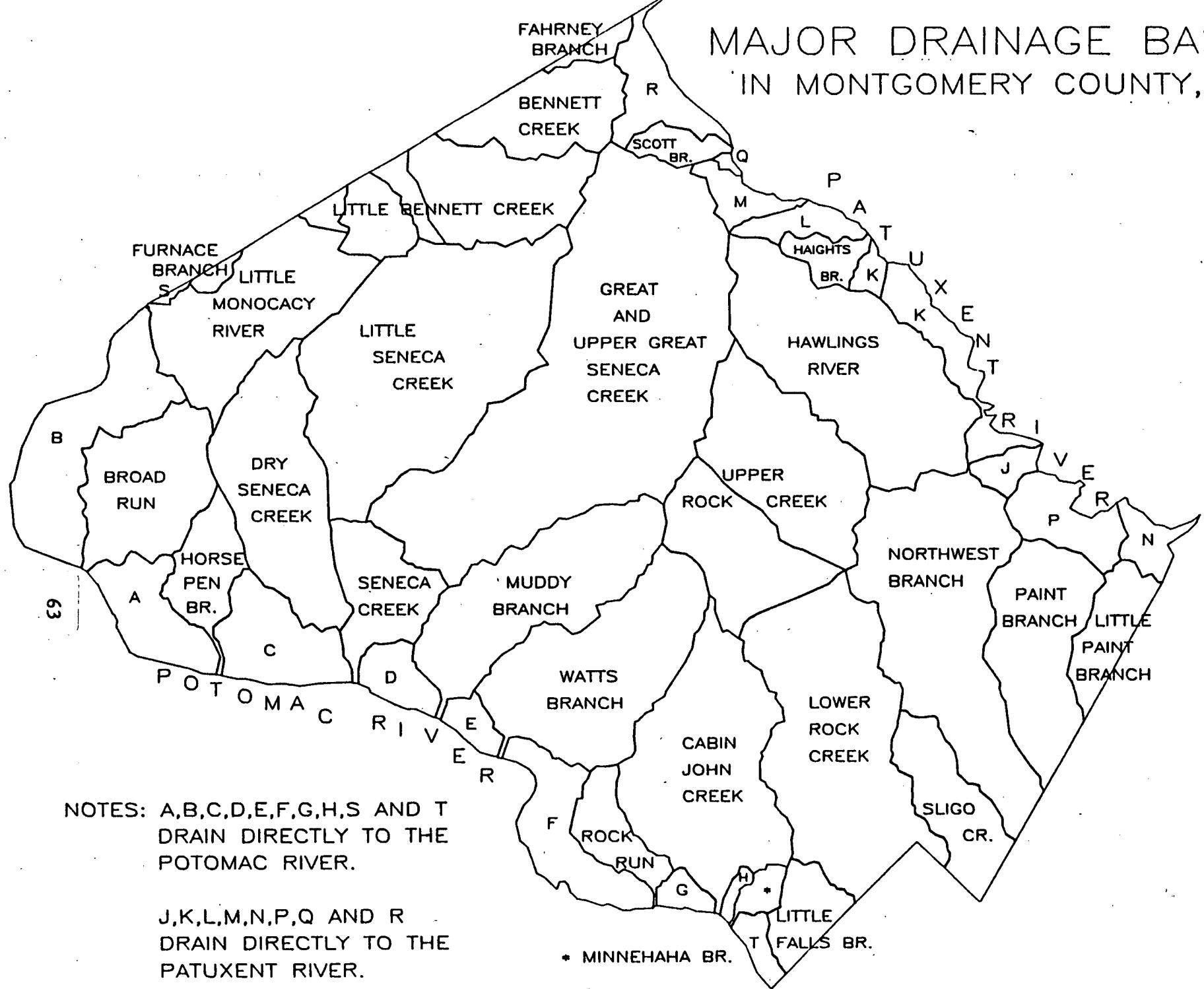
Several factors influence the determination of need for the selection of a centralized SWM facility.

- Drainage area (size and location)
- Master plan and related zoning (changes in imperviousness)
- Existing or anticipated stream channel erosion
- Water and sewer service categories
- Existing or proposed SWM controls
- Environmentally sensitive areas
- Flooding problems

Three factors--change in percent imperviousness, hydrologic segment size (acres) and location within a respective watershed, and predicted or existing stream channel erosion were initially used to identify hydrologic segments (watershed areas) which warranted detailed analysis. To be selected for detailed analysis, a hydrologic segment had to satisfy one or more of the following criteria:

- change in percent imperviousness, from existing to ultimate land use, had to be greater than 5 percent;
- the upstream drainage area, for the principal stream(s) flowing through the hydrologic segment, had to be less than one square mile (640 acres);
- the stream channel erosion factor had to be greater than 1.1 or it had to be known that a stream channel erosion problem exists in the study reach.

MAJOR DRAINAGE BASINS IN MONTGOMERY COUNTY, MD



The rationale behind the use of the above criteria may be briefly explained as follows:

- a change in imperviousness of less than 5 percent would not significantly alter runoff--the flow regimen of a stream;
- an upstream drainage area greater than 640 acres would require a major impoundment to control stormwater runoff, thus, would generally be both undesirable from both an environmental and cost-effectiveness perspective. Respective location of a hydrologic segment within a given watershed is an important consideration, insofar as peak flows are concerned (do not want a facility to add to downstream peaks);
- an erosion factor of 1.1 or less would be indicative of relatively minor levels of stream channel erosion. Known areas of moderate or severe stream channel erosion were deemed to be problem areas which warrant study.

Assigned Weighting

An environmental evaluation was made to prioritize the needs of SWM for the selected segments in the earlier step. This evaluation considered all of the eight parameters described in Table 7. Each parameter was ranked (e.g., severe, moderate) and weights assigned to the ranks. The weight assigned is shown in Table 7.

A rating matrix was prepared for each subwatershed. Table 8 is an illustration of the matrix which was developed for the Gunners Branch subwatershed of the larger Seneca basin. The subwatershed analysis consists of eight hydrologic segments.

Depending upon the point totals as illustrated in Table 8, each segment was assigned to one of the following three priority categories:

High Priority (1)	65 or more points
Moderate Priority (2)	56-64 points
Low Priority (3)	less than 56 points

TABLE 7

**SELECTION OF CENTRALIZED SWM FACILITIES, EVALUATION FACTORS
FOR PRIORITY DESIGNATIONS AND ASSIGNED WEIGHTING**

Evaluation Factor	Points
1. Locational Zoning, Master Plan	
Commercial/industrial	10
Town Sector/PD	8
High-density, residential	6
Medium-density, residential (R-150, R-90, R-60, R-40, RT-6, RT-8, RT-10, RT-125)	4
Low-density, residential (RE-1, R-200)	2
2. Changes in Percent of Imperviousness; Existing to Ultimate Land Use	
More than 40 percent, severe	10
25-40 percent, moderate	8
10-24 percent, slight	6
Less than 10 percent	2
3. Existing or Predicted Stream Channel Erosion Factor	
Severe, 1.25	15
Moderate, 1.1 to 1.25	10
Slight, 1.1	5
4. Water and Sewer Service Categories	
High priority, W 1-3; S 1-3	10
Medium priority, W 4-5; S 4-5	6
Low priority, W-6, S-6	2
5. Existing and/or Proposed SWM Controls	
None	10
Existing and/or Proposed in the CIP	0
6. Environmentally Sensitive Areas	
None	10
Woodlands/terrestrial resources	6
Stream quality and water resources	2
7. Flooding Problems	
Severe	5
Moderate	3
Slight/none	0
8. Size of Hydrologic Segment (acres)*	
Greater than 400	10
200-400	6
Less than 200	2

* Note: the optimal upstream drainage area to be controlled by a regional stormwater management facility is independent of hydrologic segment size.

TABLE 8
SAMPLE RATING MATRIX
SENECA CREEK WATERSHED, GUNNERS BRANCH SUBWATERSHED

Hydrologic Segments No.	Evaluation Factors (Points)								Point Total
	I	II	III	IV	V	VI	VII	VIII	
B 1	7	6	10	10	10	10	0	6	59
B 2	10	6	10	10	10	10	0	6	62
B 5	10	6	10	10	10	10	0	2	58
B 6	7	6	10	10	10	10	0	2	55
B 8	10	10	10	10	10	10	0	6	66
B 9	7	8	10	10	10	10	0	2	57
B 12	4	6	10	2	10	10	0	6	48
B 13	4	6	10	6	0*	10	0	6	42

- I - Zoning type.
- II - Percent change in imperviousness.
- III - Existing or predicted stream channel erosion.
- IV - Water and sewer categories.
- V - Existing or proposed SWM controls.
- VI - Environmentally sensitive area.
- VII - Flooding Problem.
- VIII - Area of hydrologic segment.

* Farmingdale Estate stormwater management facility.

Priority 1 designations would anticipate CIP project scheduling of one to three years; priority 2, four to six years; and priority 3 would reflect that no CIP facility is needed with the 6-year CIP. A separate map showing these areas is part of this document.

For the control of urban and agriculture non-point source pollution, the Planning Board recommends application of appropriate "Best Management Practices" (BMP's). These are practices that are determined to be most effective, practicable (including technological, economic, and institutional considerations) means of preventing or reducing the amount of pollution generated by non-point sources to a level compatible with water quality goals. These practices fall into two broad categories:

- urban
- agriculture

The Planning Board has generally required urban practices in their approval of subdivision and site plans. Some of the common practices recommended by the Board include stream valley buffers, swales, porous pavements, grease traps and retention/detention facilities. These BMP's have been discussed in detail in the technical reports.

The planning staff has developed Slope Guidelines² for the technical review of subdivision and/or site plans. The Planning Board remains the final arbiter in this application and may at its discretion accept, reject, or modify staff recommendations.

These guidelines require buffers for development proposals adjacent to streams and on stream slopes. Table 9 below gives the recommended buffer.

TABLE 9

RECOMMENDED MINIMUM STREAM BUFFER WIDTHS, IN FEET FROM THE STREAM BANK AND BY STREAM CLASS

Slope Range (Maximum %)	Class I (Water Contact Recreation and Aquatic Life)	Class III (Natural Trout Waters)	Class IV (Recreational Trout Waters)
0-15	50	100	75
16-25	100	150	125
> 25+	150	200	175

The Maryland Water Resources Administration has established four distinct water class uses for the surface waters of the state, each having a specific set of standards. The water class uses are:

A. CLASS I: WATER CONTACT RECREATION & AQUATIC LIFE

Waters which are suitable for water contact sports, play, and leisure time activities where the human body may come in direct contact with the surface water, and the growth and propagation of fish (other than trout), other aquatic life, and wildlife.

B. CLASS II: SHELLFISH HARVESTING

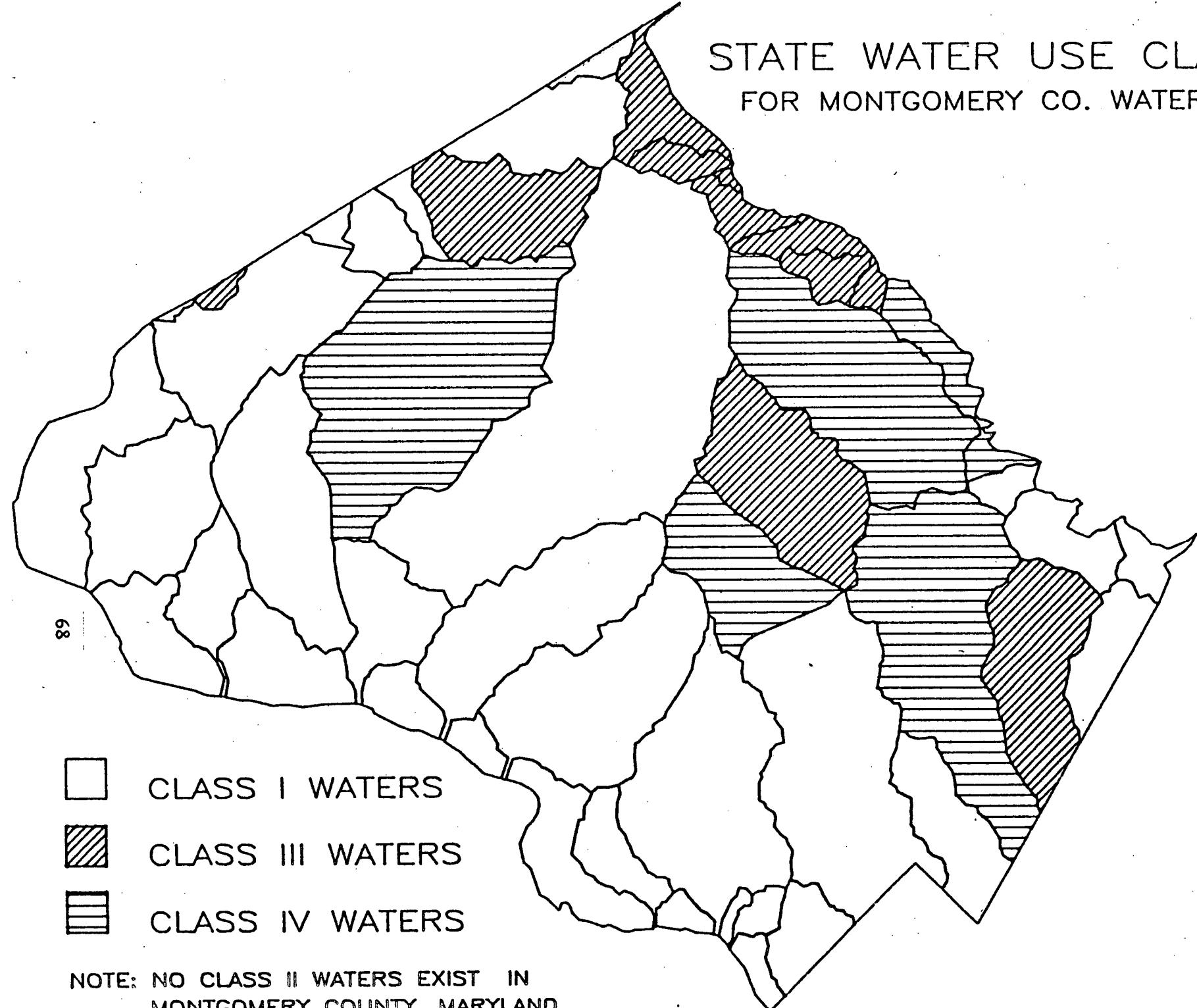
Waters where shellfish are propagated, stored, or gathered for marketing purposes including actual or potential areas for the harvesting of oysters, softshell clams, hardshell clams, and brackish water clams (none in Montgomery County).

C. CLASS III: NATURAL TROUT WATERS

Waters which are suitable for the growth and propagation of trout, and which are capable of supporting natural trout populations and their associated food organisms.

² Staff Guidelines for the Protection of Slopes and Stream Valleys. Environmental Planning Division, Montgomery County Planning Board, April 1983.

STATE WATER USE CLASSES
FOR MONTGOMERY CO. WATERSHEDS



D. CLASS IV: RECREATIONAL TROUT WATERS

Waters which are capable of holding or supporting adult trout for put-and-take fishing, and which are managed as a special fishery by periodic stocking and seasonal catching.

For subdivisional activity away from the stream valleys, guidelines provide much flexibility to developers in controlling non-point source pollution.

Montgomery Soil Conservation District deals with the agriculture BMP's in their role as a consultant to the farmers. In non-urban watersheds, such as the Patuxent, agricultural BMP's would play a significant role in reducing non-point source pollution.

Adequate maintenance is a prerequisite for a successful watershed management program. Retention or detention facilities have been designed with little or no consideration for maintenance. Some of these on-site and regional facilities are turned over to the Parks Department as a part of park dedication. The number of the facilities turned over to the Parks Department has increased recently. To cope with this problem, the Planning Board has adopted design guidelines that may be required at any pond to be dedicated to the Commission. Following the lead of the Planning Board, the Montgomery Soil Conservation District has established a task force to develop County-wide uniform design guidelines. This task force met once and delegated the technical work to a subcommittee. Report from this subcommittee is expected soon.

No program can be successful without proper monitoring and enforcement. A good water quality monitoring program is badly needed. The County's water quality monitoring program was discontinued due to fiscal constraints. The Board recommended re-examination of the need for this program in cooperation with the Council of Governments. What is badly needed is, at a minimum, meaningful data at a few selected points instead of the previous program which collected random information at many monitoring sites. The Planning Board recommends establishment of a task force to look into this matter.

Existing County code and standards are adequate to protect the water quality, if they are properly carried out. Although most of the developers abide by the County and state codes, there have been several instances of negligence in the past. The existing number of enforcement inspectors are inadequate to monitor each and every construction activity. The County DEP may consider developing binding agreements between the developers and the DEP to ensure that existing standards would be met by all developers all the time.

WATER SUPPLY AND SEWERAGE SYSTEMS PLANS

The provision of adequate water and sewer is critical to orderly County development. Accordingly, the County has adopted a Ten Year Comprehensive Water Supply and Sewerage Systems Plan whose stated objective is to achieve consistency with County planning policies, as expressed in the General Plan and in various master and sector plans. This Comprehensive Plan also requires recognition and accommodation of related programs and policies which affect and impact County land use.

Central to the Ten Year Comprehensive Water Supply and Sewerage Systems Plan has been the classification of the various parts of the County into six "water and sewer service categories," listed below. Where these classifications become less realistic or non-viable, two remedial alternatives are available: (1) the water and sewer service category classification can be changed upon presentation of appropriate evidence and documentation, and (2) comprehensive planning elements can be revised to accommodate altered circumstances and anticipations.

MONTGOMERY COUNTY WATER AND SEWER SERVICE CATEGORIES

W-1/S-1

Areas served by community and multi-use systems which are either existing or under construction, including areas abutting water or sewer service mains, whether connected or not, to which service is available by a right-of-way connection.

W-2/S-2

Areas served by extensions of existing community and multi-use systems which are in the final planning stages, and service has been authorized.

W-3/S-3

Areas where improvements to or construction of new community and multi-use systems will be given immediate priority and service will be provided within two years.

W-4/S-4

Areas where improvements to or construction of new community and multi-use systems will be programmed for the three through six-year period.

W-5/S-5

Areas where improvements to or construction of new community and multi-use systems are planned for the seven through ten-year period.

W-6/S-6

Areas where there is no planned community or multi-use service. These consist of all areas not included in categories 1 through 5.

Wherever feasible, the water category should be the same as the sewer category except where master plans recommend otherwise.

Designation of "Conflict Areas"

It has been approximately 10 years since the County's Ten Year Comprehensive Water Supply and Sewerage Systems Plan has been reviewed for consistency with County planning policy and elements. During this time, the following major planning and administration revisions have been accomplished:

1. Damascus, Eastern Montgomery County, Olney and Potomac Subregion Master Plans;
2. Gaithersburg and Vicinity, Germantown, and Potomac Subregion Master Plan Amendments;
3. Agricultural Preservation Functional Master Plan;
4. Functional Master Plan for Conservation and Management in the Seneca Creek, Muddy Branch, and Rock Creek Basins; and
5. Administrative changes to the application of the Adequate Public Facilities Ordinance.

In addition, there have been revisions to previous population, housing and employment forecasts. All sources of change have significantly impacted various aspects of the County's Ten Year Water Supply and Sewerage Systems Plan.

An emergent problem area has been, in selected cases, inconsistencies between master plan recommendations and corresponding service category recommendations.

The Planning Board has identified 41 such "conflict areas," which are listed in Table 10. The table contains ten columns. The first three serve identification and location purposes and also provide the current sewer service category. The remaining columns describe prevailing zoning, amount of acreage, average number of dwelling units, Transfer Development Rights (TDR) designation with prospective service by gravity sewer or pumping station, related sewer category changes, additional dwelling units permitted in policy area, and recommendations for resolution of conflict area problems.

The conflict areas are also identified on the accompanying map, numbered by policy area, and represented on a 1 inch = 4,000 feet base.

Recommended Priority Areas

The Planning Board proposes an additional classification procedure in which the conflict areas have been placed in "priority" categories as a means of reconciling the differences between the Ten Year Comprehensive Water Supply and Sewerage Systems Plan and adopted master plans.

The priority designation takes into account the master plan, traffic constraints, and the other growth and development factors.

These priority determinations are based upon two basic assumptions: (1) sewerage treatment capacity is existing or will be provided, either from County facilities or via interjurisdictional arrangements, and (2) sewage collection and transmission capacity is existing or will be provided either in the current Capital Improvements Program or through WSSC's Facility Plans or both.

The following lists and describes the recommended three levels of priority recommendations:

Priority 1: Consists of sewer service categories 1 through 4, and designates that service is existing or is planned within 6 years;

Priority 2: Consists of sewer service category 5 and designates that service is planned within a 7-10 year period; and

Priority 3: Consists of sewer service category 6 and designates that no community service is planned for the area.

In addition to the conflict areas listed and described in Table 10, priority designations have also been assigned to all other parts of the County. Assigning priority rank to the conflict areas has required special care, particularly in the development of Recommendations for Resolution of the Conflict Areas, in column 10.

The priority ranking of each conflict area is presented in the last column of the attached Table 10.

These priorities apply to both community water and sewer. In special cases, where community water is desirable without sewer, specific recommendations to that effect would be made in a given master plan.

TDR Receiving Areas

To encourage the preservation of agricultural land through the use of (TDR's), the Montgomery County Council, on November 3, 1981, approved simplified procedures to provide community water and sewer in TDR receiving areas. These provided for automatic change in category designation upon the Planning Board approval of a preliminary subdivision plan within a TDR area.

These simplified procedures, however, were made invalid on October 6, 1982, when the State Department of Health and Mental Hygiene (DHMH) declared that public hearings are required for all administrative category changes.

The above DHMH decision, as well as recognition that sewerage of selected TDR areas might require high-cost pumping stations, caused the County Executive to propose amendments to the current policy. Planning Board review of the proposed Executive amendments shows that they failed to address the issue of public hearings mandated by DHMH, they adversely affected the County's overall TDR program, and would cause additional delays in the development process.

In its place, the Planning Board has recommended an alternative amendment which addresses the public hearing issue and which also deals with the financing of projects with deficit payments. The Planning Board's water and sewer plan text amendment is, as follows:

"Prior to the approval by the Board of the preliminary subdivision plan, the Board shall conduct a public hearing on the category change in conjunction with the normal subdivision approval process, such hearing to be advertised in a manner conforming to the requirements... of the Annotated Code of Maryland. A copy of the notice shall be provided to the president of the County Council prior to the public hearing."

A clarification of the process by which the category designation would change was also proposed:

"The Director of the Department of Environmental Protection shall change category designations in areas of subdivisions which meet the above requirements upon written notification by the Chairman of the Montgomery County Planning Board."

The problem of major capital cost and deficit financing was covered with a third proposed text change:

"A category change in connection with the preliminary subdivision plan approval does not relieve the applicant of further facility conditions that may be imposed by the WSSC at time of authorization."

Limited time prevented the Executive, the County Council, the Department of Environmental Protection, and the Planning Board from reaching an agreement on the TDR text amendments before the approval of the 1983 Annual Update of the Ten Year Comprehensive Water Supply and Sewerage Systems Plan. Subsequently, the County Council approved Resolution No. 10-305 on July 12, 1983, resolving that "further discussion is needed to resolve the issue of public hearing procedures for water and sewer category changes in TDR receiving areas and that this issue be deferred until future revision to the Water and Sewer Plan."

To resolve this issue, the Planning Board proposes a strategy which would include adoption of the three paragraphs of text amendment as shown immediately above, and would incorporate additional text, as follows, to enhance its acceptance:

TDR receiving areas shall be divided into two types: (1) those which can be served by extension of existing gravity sewer, and (2) those which require a new sewage pumping station. Areas in the first group will proceed through the original administrative category change procedure (with the addition of a public hearing held as part of the normal subdivision approval process). Areas in the second group will be required to go through the formal sewer category change procedure, including public hearing, review by the Executive and the County Council, and adoption of the change as part of the Annual Update of the Ten Year Water Supply and Sewerage Systems Plan.

The TDR receiving areas and their respective sewerage needs, by gravity sewer or pumping station, are shown on the map with conflict areas which are included along with this document. After review by the Executive and WSSC, and approval by the Council, this map should become part of the 1984 Water and Sewerage Plan.

TABLE 10

**LIST OF AREAS WITH CONFLICTS BETWEEN MASTER PLAN STAGING AND SEWER SERVICE CATEGORIES
AND RECOMMENDATIONS FOR THEIR RESOLUTION**

Conflict Area	Master Plan Priority/ Stage and Corresponding Sewer Category	Sewer Service Category	Zone	Area (Acres)	Avg. No. of DU*	TDR Areas: Service by Gravity or Pumping Station	Sewer Category Changes Relating to Conflict Area	Additional Dwelling Units/ Employees Permitted in Policy Area	Recommendations for Resolution of Conflict Areas.
DAMASCUS									
DAM-1	Service not planned	S-5	RDT	18.2	0	N/A	None.	**	Priority three. Consistent with Master Plan.
DAM-2	Service planned	S-6	RC RE-2C R-200	29.38 235.90 <u>34.82</u> 300.1	5 94 <u>57</u> 156	N/A	Adjacent to 82-DAM-02 conditionally approved to S-3 upon use of cluster option; includes 84-DAM-07 pending.	**	Priority one. Consistent with Master Plan.
GERMANTOWN WEST									
GTW-1	Stage 1 (S-3)	S-6	R-200	5.3	8	N/A	None.	0 DU	Priority three until Germantown Master Plan update is complete. Major extension required.
GTW-2	Stage 1 (S-3)	S-6	RE-2	295.59	118	N/A	Adjacent to 81-GTW-02 (Jamison property) W-6, S-6 with automatic change to S-3 upon Planning Board approval of preliminary plan providing gravity sewer to entire property.	0 DU	Same as GTW-1. Major extension required for northwestern section.
GTW-3	Stage 1 (S-3)	S-6	R-200	48.9	80	N/A	None.	0 DU	Same as GTW-1. Major extension required.
GTW-4	Stage 3 (S-5)	S-6	R-200	15.8	25	N/A	Adjacent to 81-GTW-02 (Jamison property) (see GTW-2).	0 DU	Same as GTW-1. No major extension required but should be considered with GTW-2.

* Average number of dwelling units computed using "Effective Yield Per Acre."

** No thresholds set for this policy area.

TABLE 10 (Cont'd.)

Conflict Area	Master Plan Priority/ Stage and Corresponding Sewer Category	Sewer Service Category	Zone	Area (Acres)	Avg. No. of DU*	TDR Areas: Service by Gravity or Pumping Station	Sewer Category Changes Relating to Conflict Area	Additional Dwelling Units/ Employees Permitted in Policy Area	Recommendations for Resolution of Conflict Areas.
GERMANTOWN WEST (Cont'd.)									
GTW-5	Stage 1 & 2 (S-3)	S-5	R-200	37.84	62	N/A	Includes 84-GTW-02 pending.	0 DU	Priority one. Consistent with Master Plan. No major extension required.
GTW-6	Stage 2 (S-3)	S-6	R-200	30.4	49	N/A	None.	0 DU	Priority one. Consistent with Master Plan and proposed use as a school site.
GTW-7	Stage 2 (S-3)	S-6	R-200	3.4	5	N/A	None.	0 DU	Priority one if developer contributes to road improvements. Small property is surrounded on three sides by sewer category 3.
GTW-8	Stage 2 (S-3)	S-6	TS	89.6	varies	N/A	None.	0DU	Priority three until Germantown Master Plan update is complete. Major extension required.
GTW-9	Stage 2 (S-3)	S-5	R-150 R-90	71.30 26.28 97.58	156 76 232	N/A	Adjacent to 82-GTW-01 conditionally approved to S-3 upon Planning Board approval of preliminary plan and developer's contribution to road improvements; the same as 84-GTW-03 pending.	0 DU	Priority one if developer contributes to road improvements. Logical extension of service.
GTW-10	Stage 1 & 2 (S-3)	S-6	I-1, I-3	144.6	N/A	N/A	None.	1,571 employees	Priority one if developer contributes to road improvements. Logical extension of service.
GTW-11	Stage 3 (S-5)	S-6	TS	69.16	varies	N/A	None.	0 DU	Priority one if developer contributes to road improvements. Logical extension of service.

TABLE 10 (Cont'd.)

Conflict Area	Master Plan Priority/ Stage and Corresponding Sewer Category	Sewer Service Category	Zone	Area (Acres)	Avg. No. of DU*	TDR Areas: Service by Gravity or Pumping Station	Sewer Category Changes Relating to Conflict Area	Additional Dwelling Units/ Employees Permitted in Policy Area	Recommendations for Resolution of Conflict Areas.
GERMANTOWN EAST									
GTE-1	Stage 3 (S-5)	S-6	R-200	26.27	43	N/A	Adjacent to 82-GTE-01 conditionally approved to S-3 upon Planning Board approval of a preliminary plan and developer's contribution to road improvements.	0 DU	Priority two. Consistent with Master Plan.
GTE-2	Stage 1, 2 (S-3)	S-6	I-1 R-200	30.40 58.38 88.78	N/A 95 95	N/A	None.	0 DU 1,571 employees	Priority one if developer contributes to road improvements. Logical extension of service.
GTE-3	Stage 1 (S-3)	S-6	R-200	10.7	17	N/A	None.	0 DU	Priority one if developer contributes to road improvements. Small area surrounded on three sides by sewer category 3.
GTE-4	Stage 1, 2, 4 (S-3, S-6)	S-6	R-200 R-200/ TDR-5/ R-MH RE-2	159.96 57.90 231/ 376 171.16 389.02	262 94/ 424 (base zones) 561 (w/TDR) 706 (w/R-MH)	TDR area: pumping station	Adjacent to 83-GTE-01 conditionally approved to S-3 upon Planning Board approval of a preliminary plan and developer's contribution to road improvements.	0 DU	Priority three for TDR area until developer goes through normal category change procedure and Planning Board approves preliminary plan with TDR. Priority three for remaining area until Germantown Master Plan update is complete. Water and Sewer Plan policy is not to serve large lots.
GTE-5	Stage 1 (S-3)	S-6	R-200	6.0	9	N/A	None.	0 DU	Priority one if developer contributes to road improvements. Logical extension of service.
GTE-6	Stage 2 (S-3)	S-6	O-M	11.8	N/A	N/A	Same as 84-GTE-02.	1,571 employees	Priority one if developer contributes to road improvements. Logical extension of service.
GTE-7	Stage 1 (S-3)	S-6	R-200	13.0	21	N/A	Includes 84-GTE-01.	0 DU	Priority one if developer contributes to road improvements. Logical extension of service.

TABLE 10 (Cont'd.)

Conflict Area	Master Plan Priority/ Stage and Corresponding Sewer Category	Sewer Service Category	Zone	Area (Acres)	Avg. No. of DU*	TDR Areas: Service by Gravity or Pumping Station	Sewer Category Changes Relating to Conflict Area	Additional Dwelling Units/ Employees Permitted in Policy Area	Recommendations for Resolution of Conflict Areas.
CLOVERLY									
CLO-1	Priority 1; (S-3, S-4)	S-5	RE-2C	48.6	19	N/A	Adjacent to 82-CLO-05 conditionally approved to S-3 with use of PD or cluster option and developer's contribution to road improvements.	0 DU	Priority one if Planning Board approves preliminary plan with cluster option and developer contributes to road improvements.
CLO-2	Priority 1; (S-3, S-4)	S-5	RE-2C	219.82	87	N/A	Adjacent to 81-CLO-13 conditionally approved to S-3 with use of PD or cluster option and developer's contribution to road club; and 82-CLO-01, 02 approved S-3.	0 DU	Priority one if Planning Board approves preliminary plan with cluster option and developer contributes to road improvements.
CLO-3	Priority 2; (S-5)	S-6	RE-2C	81.1	32	N/A	None.	0 DU	Priority two. Consistent with Master Plan.
POTOMAC									
POT-1	Stage 1 (S-3)	S-6	R-200/ TDR-3 R-200	322.66 68.20 390.86	529/ 774 111 640 (base zones) 885 (with TDR)	TDR area: gravity	Includes 84-GBG-01 pending; adjacent to 82-GBG-10 approved S-3; and 83-DNT-01 approved S-4 with automatic change to S-3 upon Planning Board approval of preliminary plan and developer's contribution to road improvements.	2,324 DU	Priority three with automatic advancement to priority one upon Planning Board approval of preliminary plan including TDR and developer contributes to road improvements. Priority one for remaining R-200 area.
POT-2	Stage 1 (S-3)	S-6	R-200	37.1	60	N/A	No category changes relating to this area. It is just south of a community to which service was committed prior to policy determination to withdraw service.	2,324 DU	Priority one. Consistent with Master Plan.

TABLE 10 (Cont'd.)

Conflict Area	Master Plan Priority/ Stage and Corresponding Sewer Category	Sewer Service Category	Zone	Area (Acres)	Avg. No. of DU*	TDR Areas: Service by Gravity or Pumping Station	Sewer Category Changes Relating to Conflict Area	Additional Dwelling Units/ Employees Permitted in Policy Area	Recommendations for Resolution of Conflict Areas.
POTOMAC (Cont'd.)									
POT-3	Stage 1 (S-3)	S-6	R-200/ TDR-3	292.04	478/ 700	Muddy Branch TDR: gravity; Watts Branch TDR: pumping station	Adjacent to 82-GBG-09 approved S-4 with automatic change to S-3 upon Planning Board approval of a preliminary plan and developer's contribution to road improvements; and 83-DNT-07 approved S-3 if pump station is on property and financed by applicant.	2,324 DU	Priority three for Muddy Branch section with automatic advancement to priority one upon approval of plan including TDR. Priority three for Watts Branch section until developer goes through normal category change application procedure and Planning Board approves a plan including TDR.
POT-4	Stage 1 (S-3)	S-6	R-200	1.68	2	N/A	None.	2,324 DU	Priority one. Consistent with Master Plan.
POT-5	Stage 1 (S-3)	S-6	R-200/ TDR-3	42.81	70/ 102	Gravity	None.	2,324 DU	Priority three with automatic change to priority one upon approval of preliminary plan including TDR.
POT-6	Stage 3 (S-5)	S-6	RE-2C	138.7	55	N/A	None.	2,324 DU	Priority two. Consistent with Master Plan.
POT-7	Stage 2 (S-5)	S-6	R-200/ TDR-3 R-200	685.64 105.26 <u>790.90</u>	1124/ 1645 172 1296(base zones) 1817(w/TDR)	TDR area: pumping station	Adjacent to 83-GBG-03 approved S-3 for health reasons.	2,324 DU	Priority three for TDR area until developer goes through normal category change application procedure and Planning Board approves preliminary plan with TDR; priority two for R-200 portion; priority three for RE-1 Zone. If Gaithersburg Master Plan revisions conflict, priorities will change.
POT-8	Stage 2 (S-5)	S-6	RE-2C/ TDR-2 RE-2 R-200	922.17 470.10 52.02 <u>1504.87</u>	368/ 1000*** 188 85 641 (base zones) 1273 (w/TDR)	TDR area: gravity	84-POT-01 pending; area is just north and west of a community to which sewer was extended incrementally in anticipation of comprehensive extension.	2,324 DU	Priority three with automatic change to priority one upon Planning Board approval of preliminary plan with TDR or cluster option; priority two for R-200 area; priority three for RE-2 area.

*** Maximum development with TDR's set by Potomac Master Plan.

TABLE 10 (Cont'd.)

Conflict Area	Master Plan Priority/ Stage and Corresponding Sewer Category	Sewer Service Category	Zone	Area (Acres)	Avg. No. of DU*	TDR Areas: Service by Gravity or Pumping Station	Sewer Category Changes Relating to Conflict Area	Additional Dwelling Units/ Employees Permitted in Policy Area	Recommendations for Resolution of Conflict Areas.
FAIRLAND/WHITE OAK									
FWO-1	Priority 1; (S-3, S-4)	S-5, S-6	I-3 C-1 O-M	46.83 7.71 <u>15.84</u> <u>70.38</u>	N/A N/A N/A	N/A	Includes 84-FWO-02 and 84-PAT-01 pending; adjacent to 83-FWO-04 approved S-3.	2,874 employees	Priority one. Consistent with Master Plan.
FWO-2	Priority 1; (S-3, S-4)	S-5	R-90/ TDR-7	5.4	15/ 30	Gravity	None.	0 DU	Priority two with automatic change to priority one upon Planning Board approval of preliminary plan including TDR.
FWO-3	Priority 2; (S-5)	S-6	R-200/ PD-3 R-200/ TDR-5 R-150/ TDR-5 R-90/ TDR-5 I-3	68.50 407.72 75.16 7.81 <u>23.08</u> <u>582.27</u>	112/ 164 668/ 1630 165 300 22/ 31 <u>N/A</u> 967 (base zones) 2125 (w/TDR&PD)	TDR area: gravity	Adjacent to 82-FWO-03 (Wooten property) approved S-3 with TDR; includes 84-FWO-05, 84-PAT-02 and 84-FWO-04 pending.	0 DU 2,874 employees	Priority three with automatic change to priority one upon approval of preliminary plan including TDR or PD. Priority two for I-3 Zone.
FWO-4	Priority 2; (S-5)	S-6	RE-2	257.90		N/A	None.	0 DU	Priority three. Inconsistent with Master Plan but consistent with policy of water and sewer plan not to serve large lots.
FWO-5	Priority 1; (S-3, S-4)	S-5	R-200/ PD-3 RE-1/ PD-2	183.11 82.35 <u>265.46</u>	300/ 439 74/ <u>131</u> 374 (base zones) 570 (w/PD)	N/A	Adjacent to or including 81-FWO-01 approved S-3; 82-FWO-05 eastern part approved S-3; western part conditional on use of PD or cluster; 82-FWO-06 approved S-3; 82-CLO-03 conditional on use of PD or cluster option and developer's contribution to road improvements; and 84-CLO-05 pending.	0 DU	Priority one if Planning Board approves preliminary plan with PD or cluster option and developer contributes to road improvements.

TABLE 10 (Cont'd.)

Conflict Area	Master Plan Priority/ Stage and Corresponding Sewer Category	Sewer Service Category	Zone	Area (Acres)	Avg. No. of DU*	TDR Areas: Service by Gravity or Pumping Station	Sewer Category Changes Relating to Conflict Area	Additional Dwelling Units/ Employees Permitted in Policy Area	Recommendations for Resolution of Conflict Areas.
GAITHERSBURG									
GBG-1	Priority 1; (S-3)	S-6	I-4 (proposed) R-200 (existing)	22.9	37	N/A	None.	2,811 DU 2113 employees	Priority one. Consistent with Master Plan.
GBG-2	Priority 1; (S-3)	S-6	I-4 (proposed) R-200 (existing)	147.2	241	N/A	None.	2,811 DU 2113 employees	Priority one. Consistent with Master Plan.
GBG-3	Priority 2	S-6	R-200 R-200 (existing)/ TDR-3 (proposed)	22.0 179.0 <hr/> 201.0	36 293/ <hr/> 429 329 (base zones) 465 (with TDR)	TDR area gravity	Includes deferred category changes 82-GBG-04, 05	2,811 UD	Priority three for TDR area with change to Priority one upon Planning Board approval of preliminary plan using TDR. Priority three for remaining area until Gaithersburg Master Plan update is complete.
GBG-4	Priority 1 (S-3)	S-4	R-200	14.3	23	N/A	None.	2,811 DU	Priority one. Consistent with Master Plan.

III STATUS

COMPREHENSIVE
PLANNING
POLICIES

STATUS, RESIDENTIAL DEVELOPMENT

Residential building permits in Montgomery County have reflected three major dynamics during recent years:

1. As described in the Comprehensive Planning Policies Report (CPP) for 1982, the County has proven susceptible to major nationwide and metropolitan regional economic fluctuations, witnessed by the sharp decline in issued permits in 1981.
2. The economic and employment strengths of the local and metropolitan area economy have allowed County housing production, for brief intervals, to run counter to, and ahead of, national trends.
3. The strength of the County's economy and the flexibility of area builders have enabled the County to claim an increasing share of total metropolitan area housing production.

The foregoing are discussed below.

Susceptibility to National Economic and Financial Trends

The back-to-back incidence of nationwide economic recessions, 1980 and 1981-1982, inevitably impacted housing production activity in Montgomery County and the metropolitan area, despite the fact that area unemployment stayed substantially below the nationwide level. This occurred in 1981, when permitted units for the County fell by 29.7 percent from the 1980 level. During that same year, the metro area permits dropped by 28.8 percent and the national level by 17.4 percent.

In terms of timing, the 1981 decline in permits was a delayed reaction to a national downturn which began in 1980. As such, it undoubtedly also reflected the unique economic environment of the metropolitan area, as large-scale federal sector job uncertainties began to manifest themselves. Implementing its campaign commitments, the administration imposed hiring freezes and announced additional programs for large-scale reduction of federal employment. These uncertainties affected the entire market, not solely those with federal jobs.

Also undercutting effective demand was the peaking of mortgage interest rates in 1981 and the increasing real estate industry resort to "creative financing," very frequently involving below-market rate seller financing. Sharply rising interest rates caused market attrition, as fewer numbers of households could afford the resultant higher monthly carrying charges. The trade-up market for new housing was constrained by the unwillingness of many sellers to absorb the indirect costs of seller financing. Also, many of these prospective trade-up purchasers depended upon the equity in their homes to make the required down payments for new purchases.

¹ Comparisons are made on the basis of the Metropolitan Washington Council of Governments (COG) metropolitan area definition which does not yet include the most recent Standard Metropolitan Statistical Area (SMSA) additions of Charles, Calvert and Frederick Counties.

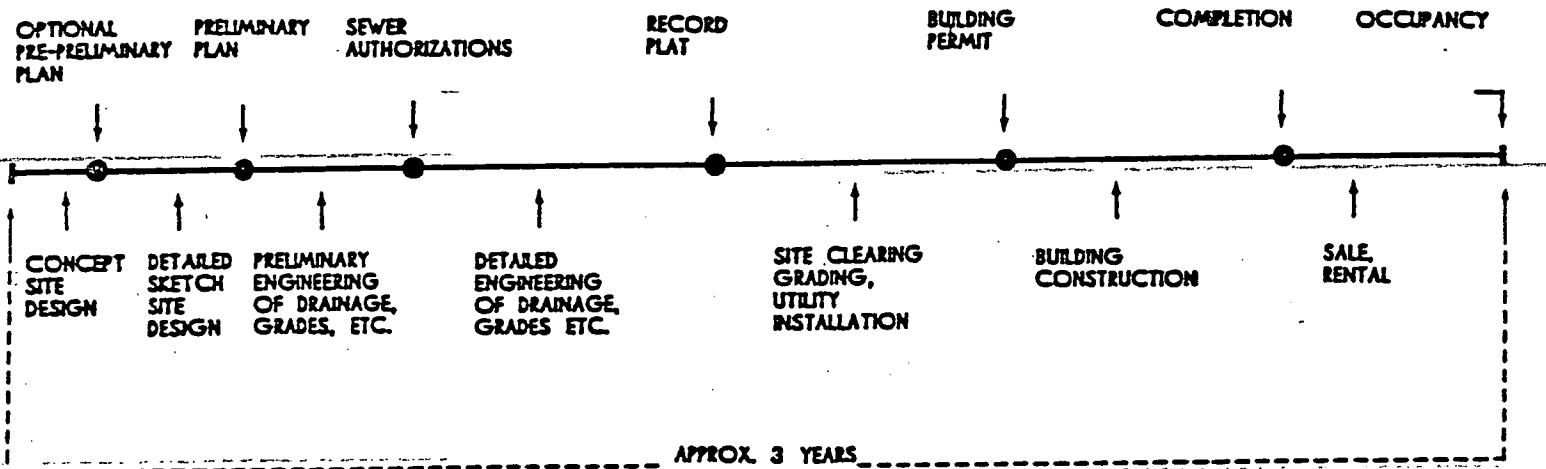
TABLE 11

MONTGOMERY COUNTY DEVELOPMENT REPORT FOR 1982
 (Number of Permits and Actions Processed Between January and December 1982)

	<u>Single Family</u>			
	Detached Units	Town-house Units	Apart-ment Units	Total Dwelling Units
RESIDENTIAL				
Sewer Authorizations Issued	2,403	4,399	5,722	12,524
Pre-Preliminary Plans Approved (87 Plans)				
Preliminary Plans Approved (160 Plans)	2,622	5,511	6,150	14,283
Plats Recorded (346 Record Plats)	2,922	2,137	3,828	8,887
Building Permits Issued	1,894	3,449	513	5,856
Completions	1,247	1,860	395	3,506
COMMERCIAL AND INDUSTRIAL				
Sewer Authorizations Issued		3.5 Million Square Feet - Gross Floor Area		
Completions		3.0 Million Square Feet - Gross Floor Area		

Source: Montgomery County Planning Board, Research Division.

SCHEMATIC DIAGRAM
 OF
 PERMIT APPROVAL PROCESS



Independent Movements of the Local Market

During 1980, nationwide housing permit issuance showed a 22.7 percent decline from 1979, reflecting that year's economic recession. The Washington region, and particularly Montgomery County, was able to withstand the national housing experience. During 1980, the County, in fact, showed a 21.5 percent gain over 1979, and the region's decline was only 5.5 percent, about one-fourth of the nation's downturn.

As described above, the 1981 permit issuance decline for both the County and the metro area was more severe than the nation's downturn. In 1982, however, the County quickly rebounded with a 46.6 percent gain, as compared to only 16.4 percent for the metro area and a less than 1.0 percent gain for the nation. The administration's federal job reduction efforts were reflected in only moderate lay-offs; goals were mainly achieved through less upsetting hiring freezes and attrition from retirements and voluntary resignations. Buyer confidence began to reassert itself.

Montgomery's Increasing Share of Total Regional Activity

Between 1970-1979, Montgomery's share (including permit activity for Rockville and Gaithersburg) of total metro area activity stayed fairly constant at approximately 20 percent. The sewer moratorium of the mid-1970's caused a precipitous drop in 1974 when County permit issuance activity fell to little more than 10 percent of the metro total. With the resolution of the sewer problem, County activity rapidly regained its former share (Table 12).

The 1980's decade, however, began to witness Montgomery's increasing share of total metro area housing activity. In 1980 and 1981, its share amounted to over 28.0 percent and increased to over one-third, to 35.83 percent, in 1982. Permit activity for the first five months of 1983 has seen Montgomery's share at 32.5 percent, nearly paralleling 1982's high.

Montgomery County's Changing Housing Production Mix: Affordability Gains

Recent proportional housing production gains in Montgomery County vis-a-vis the metropolitan area were analyzed for the period 1979-1982. The analysis shows the following:

1. Greatest gains were made in the production of single-family townhouse units. The County's share of total metro area townhouse production nearly doubled, from 25.4 percent to 43.8 percent;
2. The County also gained in its proportion of single-family detached production, increasing from 18.2 to 29.1 percent, a gain of 59.9 percent, between 1979-1982;
3. Combined single-family housing production, attached and detached units, increased from 21.2 percent to 37.1 percent, a gain of 75.0 percent; and
4. The share of multi-family units, condominiums and rentals, ranged from a low of 26.3 percent to a high of 36.9 percent during 1979-1982. Actual multi-family magnitudes, however, have been modest.

TABLE 12

**DISTRIBUTION OF RESIDENTIAL BUILDING PERMIT AUTHORIZATIONS ISSUED IN
WASHINGTON METROPOLITAN AREA SMSA FROM 1972 - MAY 1983 BY JURISDICTION**

		1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	Jan./June 1983
DISTRICT OF COLUMBIA	Number Units	591	1,790	1,226	436	1,968	2,194	2,211	1,742	2,642	649	368	109
	Percent Units	1.38	4.90	7.96	4.70	11.65	9.10	9.53	8.35	13.40	4.62	2.25	1.03
ALEXANDRIA	Number Units	2,811	2,393	3,145	987	683	544	635	330	568	311	231	40
	Percent Units	6.57	6.55	20.43	10.64	4.04	2.26	2.74	1.58	2.88	2.21	1.41	0.38
ARLINGTON COUNTY	Number Units	121	1,662	219	189	418	985	722	656	563	595	386	446
	Percent Units	.28	4.55	1.42	2.0 ^b	2.47	4.08	3.11	3.14	2.86	4.24	2.36	4.20
FAIRFAX¹ COUNTY	Number Units	17,429	11,428	4,288	3,521	5,996	10,014	8,361	8,380	6,563	4,772	5,190	3,622
	Percent Units	40.74	31.27	27.85	35.05	35.48	41.52	36.02	40.14	33.30	33.99	31.76	34.11
LOUDOUN COUNTY	Number Units	1,587	1,360	1,122	224	492	904	743	463	342	378	700	408
	Percent Units	3.71	3.72	7.29	2.42	2.91	3.75	3.20	2.22	1.74	2.69	4.28	3.84
PRINCE WILLIAM COUNTY	Number Units	3,771	3,332	931	800	1,724	2,293	2,997	2,155	1,643	1,507	1,764	1,201
	Percent Units	8.82	9.12	6.05	8.63	10.20	9.51	12.91	10.32	8.34	10.73	10.80	11.31
MONTGOMERY² COUNTY	Number Units	10,514	7,802	1,632	1,935	3,569	3,926	5,122	4,676	5,683	3,994	5,856	3,450
	Percent Units	24.58	21.35	10.60	20.86	21.12	16.28	22.07	22.41	28.83	28.45	35.84	32.49
PRINCE GEORGE'S COUNTY	Number Units	5,953	6,775	2,833	1,453	2,049	3,260	2,420	2,459	1,706	1,835	1,845	1,342
	Percent Units	13.92	18.54	18.40	15.67	12.12	13.52	10.43	11.78	8.66	13.07	11.29	12.64
TOTAL	Number Units	42,777	36,542	15,396	9,545	16,899	24,120	23,211	20,861	19,710	14,041	16,340	10,618
	Percent Units	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

¹ Includes data for the cities of Fairfax and Falls Church.

² Includes data for the cities of Rockville and Gaithersburg.

SOURCE: Metropolitan Washington Council of Governments, Department of Human Resources. 1981 data has been revised slightly from last years table.

The foregoing changes in County-metro area production relationships are reflected in building permit activity changes within the County during the three year period, as follows:

1. Housing production shifted to attached townhouse production, from 39.5 percent of total permit activity in 1979 to 58.9 percent in 1982, a percentage gain of 49.1 percent;
2. Single-family detached production declined from 39.8 percent in 1979 to 32.3 percent in 1982, a reduction of 18.8 percent; and
3. There has been the substantial reduction in permitted multi-family units, from 20.7 percent in 1979 to only 8.8 percent in 1982. This sharp cutback is attributable to the phase-out of the federal government's Section 8 rental assistance program. This program provided not only subsidy assistance, but also was a source of below-market rate of financing ($7\frac{1}{2}$ percent) under the Tandem program for both the Section 8 and for the unsubsidized units (up to 80 percent) in the same project(s). Multi-family rentals in the metro area and the County since the mid-1970's had predominantly depended upon such subsidy or financing support. The demand for multi-family condominium units had been substantially met by both new construction and conversions. These factors have contributed to the reduction in multi-family permit activity.

During 1982, there was a dramatic increase in the number of approved multi-family preliminary plans and record plats. These appear inflated by one development. Out of the 6,150 units approved for multi-family preliminary plans, almost one-third of those units were in one preliminary in the Fairland area (Robey Road 1,936 units). All of those units in Robey Road went to record plat. Thus, the Robey Road development accounts for over 50 percent of the 3,878 multi-family record plats in 1982. The only firm plan for this development in the near term is the construction of 250 units.

Townhouse production gains were not only achieved from a shift from detached sales single-family units to townhouses, but also a shift from multi-family rental and condominium activity to sales of townhouses.

The beginning of 1983 witnessed a nationwide resurgence of homebuilding activity, and Montgomery County has shared in this recovery. The first five months of 1983 show permits issued for 3,450 units in the County, as compared to 1,983 for the corresponding period of 1982, a gain of 74.0 percent. The nationwide gain has been virtually the same, 73.9 percent. As described earlier, this early 1983 activity continues to reflect an increasing County share of total metro area homebuilding activity.

Sales Prices

Between 1979-1982, the median price of new non-condominium sales housing in Montgomery County increased by a modest 15.9 percent. The median price of existing non-condominium housing rose by 26.6 percent, or an average of nearly 7 percent a year.

The substantially lesser rise in new housing sales prices can be attributed to two factors: (1) the previously described higher incidence of lower-priced attached townhouse construction, and (2) the lower median price achieved for new single-family detached housing from down-sizing and reduction of amenities. This is evidenced by sales price

TABLE 13

MEDIAN PRICES FOR NEW AND EXISTING SINGLE-FAMILY
 NON-CONDOMINIUM SALES HOUSING, MONTGOMERY COUNTY, MARYLAND
 1975 - 1982

	New	Total Existing	New		Existing	
			Detached	Attached	Detached	Attached
1975 ^{1/}	\$52,443	\$51,048	--	--	--	--
1976 ^{1/}	46,000	58,500	--	--	--	--
1977	57,000	63,500	--	--	--	--
1978	65,999	69,499	--	--	--	--
1979	75,500	79,000	--	--	--	--
1980	88,030	86,564	\$134,225	\$76,184	\$ 96,918	\$66,023
1981 ^{1/}	85,552	90,315	134,810	76,017	101,276	70,585
1982	87,500	100,000	124,000	78,500	110,000	84,000

^{1/} First and second quarter.

Source: Montgomery County Planning Board, Research Division, STAR system (Sales/Transaction Automated Report) used for 1982; data supplied by Department of Assessments, State of Maryland.

data for the first half of 1981 and the full year of 1982. During that brief period, the median price of new townhouse construction rose from \$76,017 to \$78,500, an increase of 3.27 percent. In contrast, the median price of detached single-family housing fell from \$134,810 to \$124,000, a reduction of 8.02 percent. Both types of housing encountered identical production costs (i.e., labor, materials, financing). Accordingly, the lower prices for detached units would reflect "less housing for a lower price."

For the same 1981-1982 period, the median price of existing single-family detached housing rose from \$101,276 to \$110,000, an increase of 8.61 percent. The median price of existing townhouse units also rose from \$70,585 to \$84,000, an increase of 19.0 percent. The sales of previously built townhouses were frequently represented by units with more amenities in preferred, closer-in locations. In 1982, for example, nearly 29 percent of these townhouse transactions occurred in Rockville, Potomac, North Bethesda, and Bethesda, where median sales prices ranged from \$93,500 to \$130,000. Perhaps more importantly, the relatively high mortgage interest rates in 1982 (despite their retreat from peak 1981 levels of over 16 percent) channeled County effective demand into lower-priced inventory represented by townhouses, and such larger demand tended to bid up their prices.

Table 13 sets forth median sales prices for new and existing single-family housing for the longer period, 1975-1982. This shows that the median price of new sales housing rose at nearly 70 percent of the increase in existing units, 66.9 percent, as compared to 95.9 percent. (Note: sales prices for detached and attached housing are not available prior to 1980.)

The slower pace of price increases in new construction would reflect, in part, success achieved under the County's program to enhance housing affordability through more flexible land use patterns, i.e., making more sites available for higher-density and less costly townhouse production.

The foregoing is supported by review of building permit data for the longer period. Single-family attached housing, as a percent of total permitted County housing units, rose from a low of 22 percent in 1975 to over 38 percent in 1980-1981, and then leaped to almost 59 percent in 1982.

Montgomery County Planning Board has instituted a computer program called the STAR system (Sales/Transaction Automated Report) which provides continuous and more detailed tracking of price movements in new and existing sales housing. The data will also be available for individual planning areas, which will permit a more detailed description of price movements within these individual planning areas in future reports (Table 14).

TABLE 14

**NEW AND EXISTING DETACHED AND ATTACHED
MEDIAN SINGLE-FAMILY HOUSING PRICES^{1/}
BY PLANNING AREA
JANUARY 1982 - DECEMBER 1982**

Policy Areas and Planning Areas	New Single-Family Detached	Existing Single-Family Detached	New Single-Family Attached	Existing Single-Family Attached
SILVER SPRING				
PA 36 Silver Spring	\$ --	\$95,000	\$117,500	\$104,000
37 Takoma Park	--	83,000	--	68,000
BETHESDA				
PA 35 Bethesda	255,000	154,000	160,000	130,000
NORTH BETHESDA				
PA 26 Rockville	176,000	85,000	98,000	93,500
30 N. Bethesda	251,000	130,000	151,000	138,000
KENSINGTON-WHEATON				
PA 27 Aspen Hill	165,000	102,000	82,000	97,500
31 Wheaton	124,000	84,000	97,500	67,500
32 Kemp Mill	116,500	90,000	--	79,000
I-270 CORRIDOR				
PA 13 Clarksburg	--	75,000	--	85,000
19 Germantown	94,000	90,000	69,500	70,000
20 Gaithersburg	94,000	115,000	67,500	75,000
21 Gaithersburg	102,500	89,500	87,000	82,000
COLESVILLE				
PA 28 Cloversly	144,000	117,000	--	130,000
33 White Oak	117,500	111,000	105,500	88,500
34 Fairland	144,500	134,000	70,500	68,500
POTOMAC				
PA 24 Darnestown	152,000	144,000	--	225,000
25 Trivlah	199,000	140,000	--	155,000
29 Potomac	241,500	195,000	135,500	125,000
OLNEY				
PA 23 Olney	132,500	112,000	61,500	70,500
DAMASCUS				
PA 10 Bennett	--	90,000	--	80,000
11 Damascus	66,500	82,500	64,000	69,500
14 Goshen	155,000	129,000	57,000	94,000
15 Patuxent	150,000	123,000	--	85,000
22 Rock Creek	127,500	123,000	85,500	96,500
POOLESVILLE				
PA 12 Dickerson	--	91,000	--	--
16 Martinsburg	--	--	--	--
17 Poolesville	--	82,500	--	58,000
18 Lower Seneca	--	80,000	--	52,000
TOTAL COUNTY	124,000	110,000	78,500	84,000

^{1/} This data includes market priced housing and excludes bulk transfers of property, relative to relative transfers and transfers made without monetary consideration. A blank indicates a lack of market price transactions. Prices are determined by tax stamps paid at the time of transfer.

Source: Montgomery County Planning Board, Research Division, STAR system.

APPROVED PRELIMINARY SUBDIVISION PLANS BY STRUCTURE TYPE
MONTGOMERY COUNTY 1972 - 1982

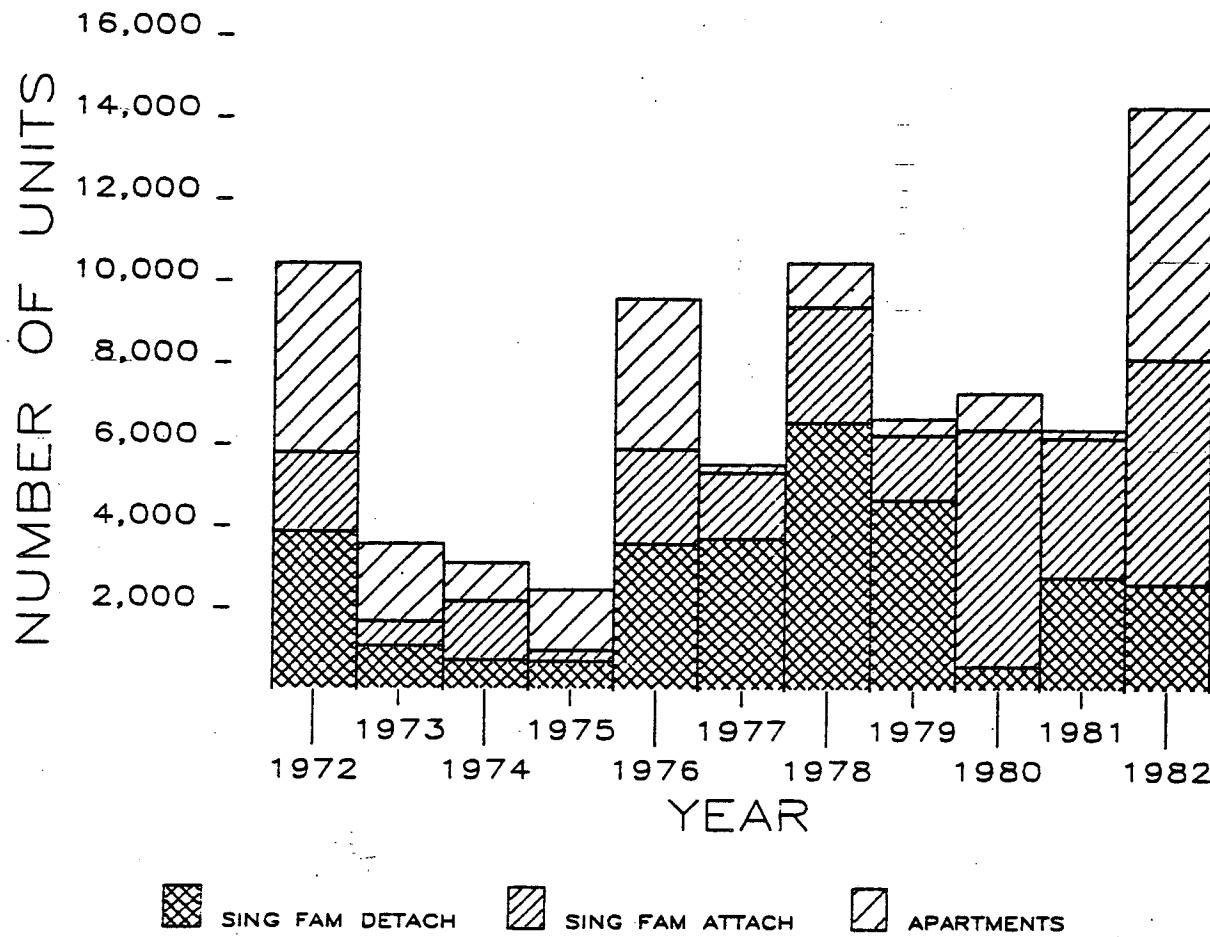


TABLE 15
APPROVED PRELIMINARY SUBDIVISION PLANS, BY STRUCTURE TYPE
MONTGOMERY COUNTY
1972-1982

Period	SF Detached		SF Attached		Apartments		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Jan.-Dec. 1972	3,882	37.1	1,934	18.5	4,639	44.4	10,455	100.0
Jan.-Dec. 1973	1,089	30.3	600	16.7	1,908	53.0	3,597	100.0
Jan.-Dec. 1974	741	23.7	1,444	46.2	942	30.1	3,127	100.0
Jan.-Dec. 1975	705	14.4	2,700	55.1	1,492	30.5	4,897	100.0
Jan.-Dec. 1976	3,593	37.4	2,315	24.1	3,689	38.4	9,597	100.0
Jan.-Dec. 1977	3,735	67.2	1,611	29.0	208	3.7	5,554	100.0
Jan.-Dec. 1978	6,575	62.7	2,821	26.9	1,093	10.4	10,489	100.0
Jan.-Dec. 1979	4,679	70.1	1,582	23.7	418	6.3	6,679	100.0
Jan.-Dec. 1980	6,019	47.3	5,792	45.5	909	7.2	12,720	100.0
Jan.-Dec. 1981	2,783	43.5	3,414	53.3	208	3.2	6,405	100.0
Jan.-Dec. 1982	2,622	18.4	5,511	38.6	6,150	43.0	14,283	100.0
TOTAL-Jan. 1972-Dec. 1982	36,423	41.4	29,724	33.9	21,656	24.7	87,803	100.0

SOURCE: Montgomery County Planning Board, Research Division.

NOTE: Does not include preliminary plans from the incorporated cities of Gaithersburg and Rockville.

**RECORD PLATS BY STRUCTURE TYPE
MONTGOMERY COUNTY 1972 - 1982**

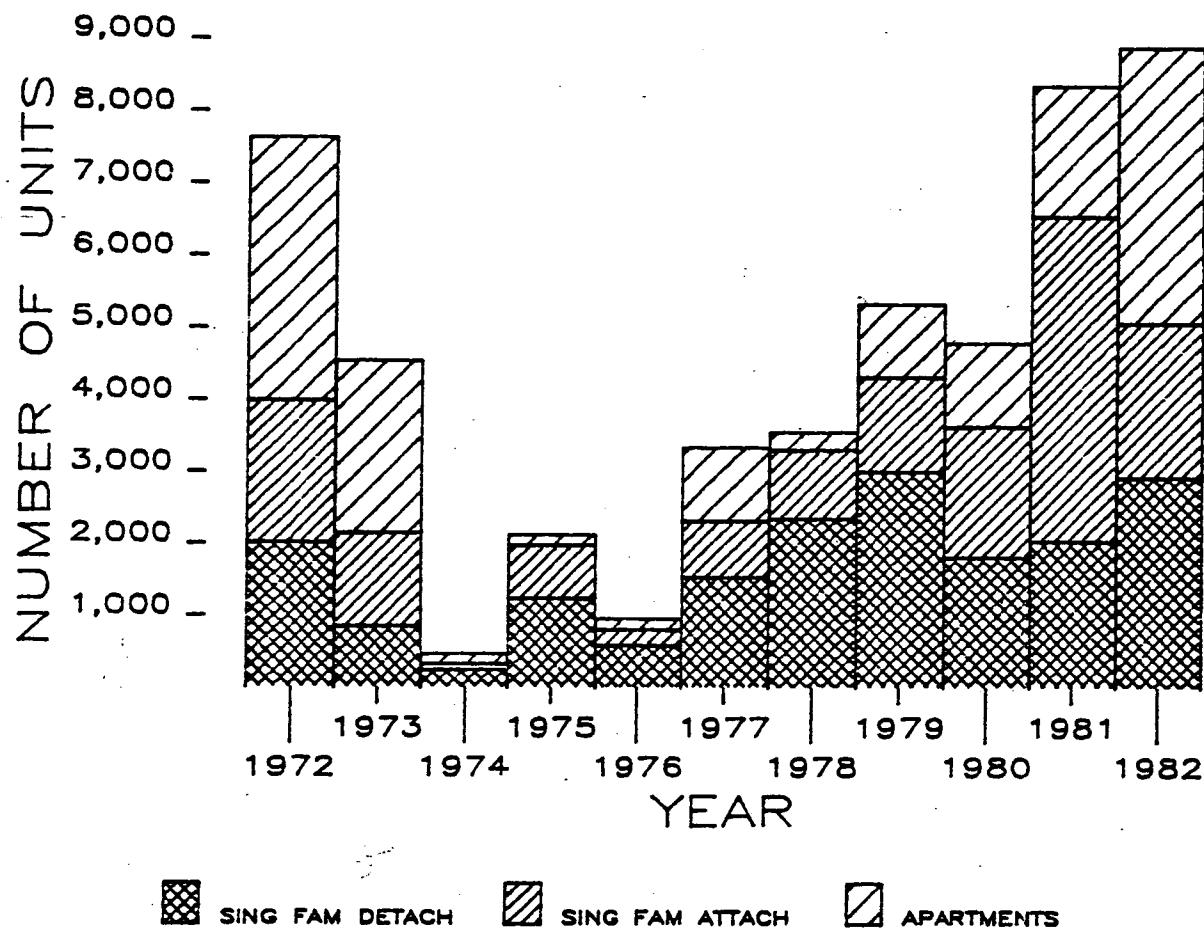


TABLE 16
RECORDED PLATS, BY STRUCTURE TYPE
MONTGOMERY COUNTY
1972-1982

Period	SF Detached		SF Attached		Apartments		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Jan.-Dec. 1972	2,013	26.4	1,973	25.8	3,647	47.8	7,633	100.0
Jan.-Dec. 1973	849	18.7	1,295	28.5	2,399	52.8	4,543	100.0
Jan.-Dec. 1974	250	52.7	77	16.2	147	31.0	474	100.0
Jan.-Dec. 1975	1,240	58.2	739	34.7	153	7.2	2,132	100.0
Jan.-Dec. 1976	590	61.3	216	22.5	156	16.2	962	100.0
Jan.-Dec. 1977	1,535	45.9	780	23.4	1,026	30.7	3,341	100.0
Jan.-Dec. 1978	2,347	66.0	955	26.9	252	7.1	3,554	100.0
Jan.-Dec. 1979	3,001	56.3	1,312	24.6	1,018	19.1	5,331	100.0
Jan.-Dec. 1980	1,812	37.8	1,814	37.9	1,163	24.3	4,789	100.0
Jan.-Dec. 1981	2,037	24.4	4,499	53.9	1,814	21.7	8,350	100.0
Jan.-Dec. 1982	2,922	32.9	2,137	24.0	3,828	43.1	8,887	100.0

TOTAL-Jan. 1972-

Dec. 1982 18,596 37.2 15,797 31.6 15,603 31.2 49,996 100.0

SOURCE: Montgomery County Planning Board, Research Division.

NOTE: Does not include plats from the incorporated cities of Gaithersburg and Rockville.

BUILDING PERMITS BY STRUCTURE TYPE
MONTGOMERY COUNTY 1972 - 1982

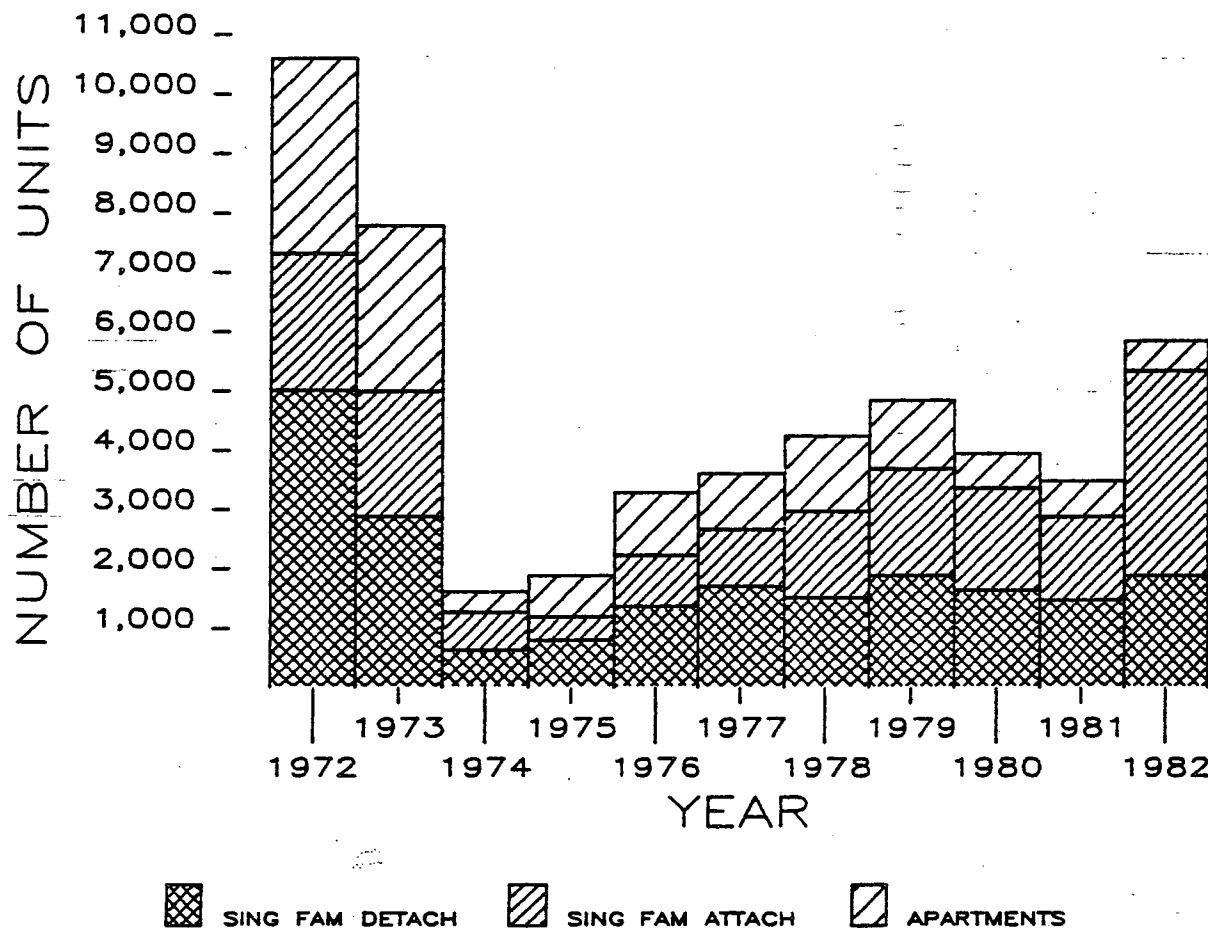


TABLE 17
BUILDING PERMITS, BY STRUCTURE TYPE
MONTGOMERY COUNTY
1972-1982

Period	SF Detached		SF Attached		Apartments		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Jan.-Dec. 1972	5,013	47.3	2,299	21.7	3,293	31.1	10,605	100.0
Jan.-Dec. 1973	2,888	37.1	2,111	27.1	2,792	35.8	7,791	100.0
Jan.-Dec. 1974	639	39.2	641	39.3	349	21.4	1,629	100.0
Jan.-Dec. 1975	806	42.3	393	20.6	705	37.0	1,904	100.0
Jan.-Dec. 1976	1,373	41.6	861	26.1	1,066	32.3	3,300	100.0
Jan.-Dec. 1977	1,713	47.4	953	26.3	950	26.3	3,616	100.0
Jan.-Dec. 1978	1,523	35.8	1,456	34.2	1,276	30.0	4,255	100.0
Jan.-Dec. 1979	1,899	39.1	1,796	37.0	1,162	23.9	4,857	100.0
Jan.-Dec. 1980	1,649	41.6	1,722	43.5	589	14.9	3,960	100.0
Jan.-Dec. 1981	1,480	42.3	1,408	40.3	609	17.4	3,497	100.0
Jan.-Dec. 1982	1,894	32.3	3,449	58.9	513	8.8	5,856	100.0
TOTAL Jan. 1972-Dec. 1982	20,677	40.5	17,089	33.5	13,304	26.0	51,070	100.0

SOURCE: Montgomery County Planning Board, Research Division, data supplied by Montgomery County Department of Environmental Protection and the incorporated cities of Gaithersburg and Rockville. 1982 data from "Summary of 1982 Residential Building Permit Authorizations for the Washington Metropolitan Area," Metropolitan Washington, COG.

**HOUSING COMPLETIONS BY STRUCTURE TYPE
MONTGOMERY COUNTY 1972 - 1982**

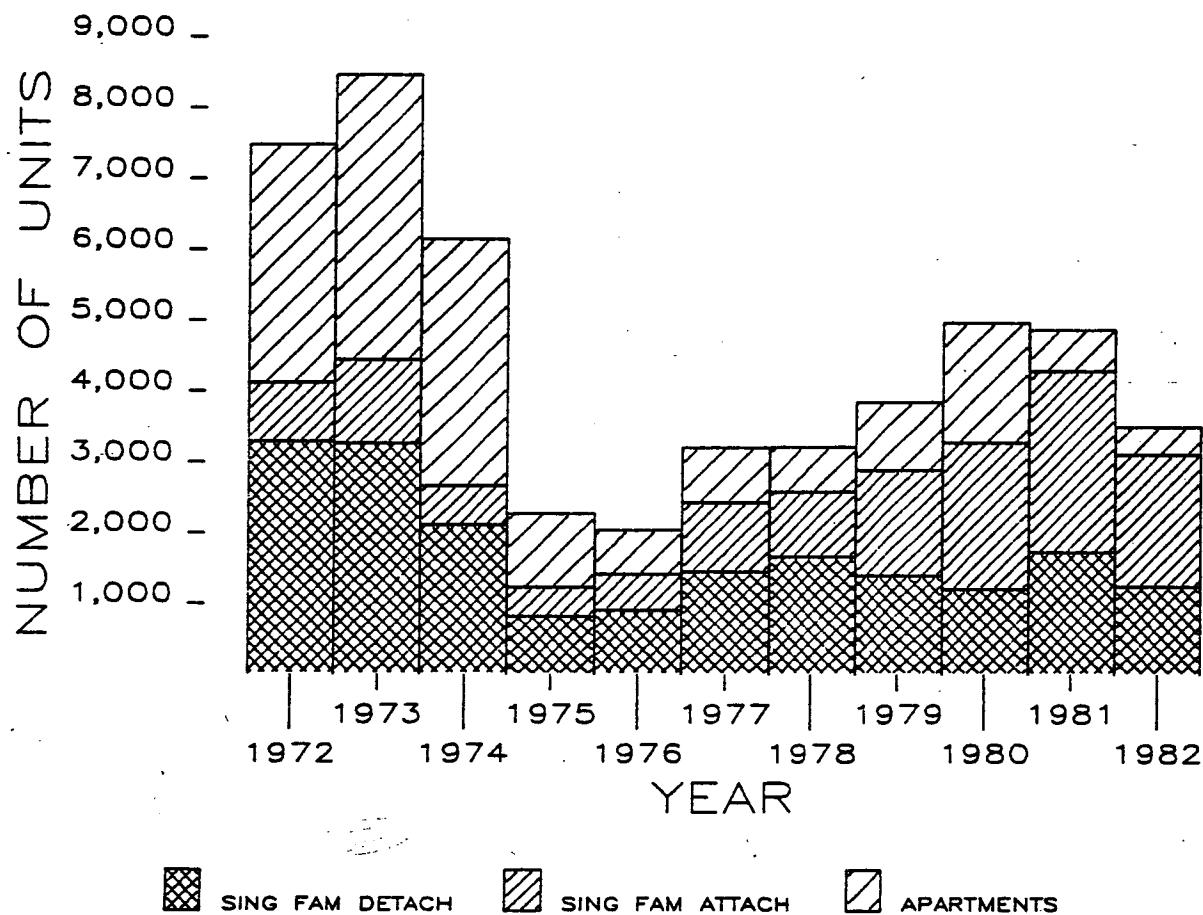


TABLE 18

**HOUSING COMPLETIONS, BY STRUCTURE TYPE
MONTGOMERY COUNTY
1972-1982**

Period	SF Detached		SF Attached		Apartments		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Jan.-Dec. 1972	3,289	43.9	830	11.1	3,365	45.0	7,484	100.0
Jan.-Dec. 1973	3,265	38.6	1,179	13.9	4,024	47.5	8,468	100.0
Jan.-Dec. 1974	2,113	34.3	554	9.0	3,489	56.7	6,156	100.0
Jan.-Dec. 1975	822	36.0	411	18.0	1,048	45.9	2,281	100.0
Jan.-Dec. 1976	909	44.5	508	24.9	625	30.6	2,042	100.0
Jan.-Dec. 1977	1,454	45.2	976	30.4	783	24.4	3,213	100.0
Jan.-Dec. 1978	1,664	51.6	920	28.5	640	19.8	3,224	100.0
Jan.-Dec. 1979	1,399	36.3	1,489	38.6	967	25.1	3,855	100.0
Jan.-Dec. 1980	1,207	24.2	2,073	41.6	1,698	34.1	4,978	100.0
Jan.-Dec. 1981	1,733	36.3	2,556	52.4	590	12.1	4,879	100.0
Jan.-Dec. 1982	1,247	35.5	1,864	53.1	395	11.2	3,506	100.0
TOTAL-Jan. 1972-Dec. 1982	19,102	38.1	13,360	26.7	17,624	35.2	50,086	100.0

SOURCE: Montgomery County Planning Board, Research Division, from records of the Supervisor of Assessments, State of Maryland.

**HOUSING UNIT COMPLETIONS ON SEPTIC AND PUBLIC SEWER
MONTGOMERY COUNTY 1960 - 1982**

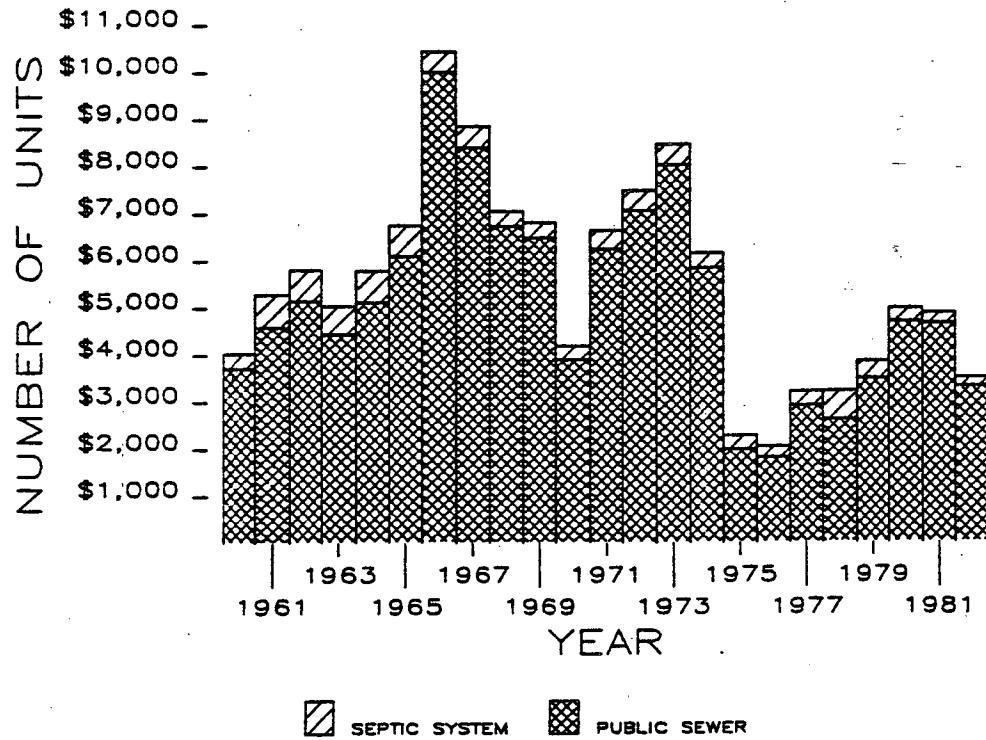


TABLE 7
HOUSING CONSTRUCTION, SEPTIC AND PUBLIC SEWER SERVICE SYSTEMS
MONTGOMERY COUNTY
1960-1982

Year	Septic System	Public Sewer Service	Total Units Constructed	% of Total Units Constructed On Septic System
1960	321	3,712	4,033	7.9
1961	708	4,581	5,289	13.4
1962	669	5,144	5,813	11.5
1963	605	4,437	5,042	12.0
1964	672	5,120	5,792	11.6
1965	654	6,097	6,751	9.7
1966	437	10,008	10,445	4.2
1967	456	8,398	8,854	5.1
1968	316	6,730	7,046	4.5
1969	324	6,482	6,806	4.7
1970	262	3,900	4,162	6.3
1971	396	6,244	6,640	5.9
1972	427	7,057	7,484	5.7
1973	439	8,029	8,468	5.2
1974	317	5,839	6,156	5.1
1975	295	1,986	2,281	12.9
1976	229	1,813	2,042	11.2
1977	301	2,912	3,213	9.4
1978	604	2,620	3,224	18.7
1979	370	3,485	3,855	9.6
1980	287	4,691	4,978	5.8
1981	226	4,653	4,879	4.6
1982	187	3,314	3,506	5.3
TOTAL- 1960-82	9,502	117,257	126,759	7.5

SOURCE: Montgomery County Planning Board, Research Division, data supplied by the Department of Environmental Protection, Montgomery County.

TABLE 20
POPULATION AND HOUSEHOLDS
1960-1983
MONTGOMERY COUNTY

Year	Population	Households ¹	Change From Previous Year	
			Population	Households
1960	340,928	92,433	-	-
1961	353,400	96,300	12,472	3,867
1962	369,500	101,500	16,100	5,200
1963	386,900	107,100	17,400	5,600
1964	402,000	112,000	15,100	4,900
1965	418,900	117,600	16,900	5,600
1966	438,200	124,200	19,300	6,600
1967	466,300	134,300	28,100	10,100
1968	489,900	142,900	23,600	8,600
1969	508,200	149,700	18,300	6,800
1970	522,809	156,674	14,609	6,974
1971	530,900	161,100	8,091	4,426
1972	544,900	168,100	14,000	7,000
1973	561,100	176,000	16,200	7,900
1974	579,600	185,000	18,500	9,000
1975	589,400	191,400	9,800	6,400
1976	585,800	193,600	-3,600	2,200
1977	581,100	195,600	-4,700	2,000
1978	579,100	198,800	-2,000	3,200
1979	578,300	202,000	-800	3,200
1980	579,053	207,195	753	5,195 ²
1981	582,500	211,200	3,447	4,098
1982	586,500	215,600	3,500	4,400
1983	590,500	219,000	1,000	3,400

¹ Occupied housing units.

² May through December.

Sources: 1960, 1970 and 1980 are April figures from the U.S. Census of Population and Housing. All other population and household estimates are for January, produced by the Montgomery County Planning Board, Research Division.

STATUS OF NON-RESIDENTIAL CONSTRUCTION

Summary and Conclusions

During the past two years, despite the national economic recessions of 1980 and 1981-1982, Montgomery County has supported high levels of new office and warehouse building development. Several mutually reinforcing factors have supported such development.

1. In the face of national economic downturn, the County's economy has been comparatively robust. County unemployment has been about one-half of the metro area's rate and one-third of the national rate.
2. County jobs have continued to grow, albeit at a reduced rate. Montgomery County has increasingly become an employment center, almost three-fifths of the County labor force have jobs within the County. Equally important, Montgomery County has been obtaining an increasing proportion of total regional employment.
3. The County's housing affordability progress has permitted it to claim about one-third of total metro housing production during 1982, as compared to a one-fifth share during the 1970's. Rapidly growing residential areas have generated needs for retail and professional services and structures to house them.

The above economic factors have been paralleled by recent changes in financing that have substantially expanded the number of prospective non-residential construction lenders and investors. Increasingly, lenders have used their credit to establish ownership claims. This enables them to benefit from longer-term inflationary gains and also from the advantages of property depreciation for income tax purposes. Long-term, fixed-rate mortgages have been replaced by flexible loans of "bullet" nature, which allow periodic renegotiation of interest rates. Commercial development has attracted syndicate investors who frequently find the attraction of depreciation benefits more important than positive cash flows. Their limited partnership financial exposures and more diversified resources allow them, as well as the large institutional owner-lenders, to endure longer-than-usual tenanting periods and the negative cash flows of excess vacancies.

Office Building Construction

The above circumstances have stimulated the development of new competitive office space in the metro area and in the County. The Washington region has been only one of several metropolitan areas to receive substantial additions of new office space. Chicago, New York, Dallas, Houston and Denver, among others, also saw large increases to their office inventories.

Within the County, a historical high water mark was achieved in 1981 when approximately three million feet of new office space, single user as well as competitive, were added to the inventory. The back-to-back 1980 and 1981-1982 recessions and local market saturation caused a reduction of office construction in 1982. Within the County, new office space additions fell to 1.5 million square feet, substantially below the 1981 record, but very respectable by historical standards (Table 21).

Prospects for 1983 suggest that completions will exceed the 1982 level. The Chesapeake and Potomac (C & P) Telephone Building on US 29, by itself, will provide some 700,000 square feet of single user space. In Silver Spring, the Wayne Avenue Building's completion spanning 1982-1983 will provide some 200,000 square feet of competitive space. Smaller, less complex undertakings, whose starts have reflected restored investor confidence in a recovering national economy, will aggregate several hundred thousand additional feet.

The 1982 office building activity was dominated by Gaithersburg area construction; 13 new structures added almost 650,000 square feet. Activity in Rockville saw development of 340,000 square feet in five new buildings.

Of special note has been the recent emergence of downtown Silver Spring as a target for new office development. The near completion of the Wayne Avenue Building, adjacent to the Silver Spring Metro, and its substantial early tenanting by American Telephone and Telegram (AT & T) signalled a new investor-user acceptance of this older central business district. An additional 170,000 square feet of office space are under construction in downtown Silver Spring, and 100,000 additional feet are in final planning.

Metro development has stimulated new office building development in two additional areas. Most noteworthy has been the program to provide a prestige hotel/office/retail/recreational complex at the Bethesda Metro Center. Eventual office development at this site may exceed two million square feet. A second focus has been the Twinbrook Metro station on Rockville Pike, where a new office building and prestige hotel complex have already been completed.

Single user office buildings have been prominent, as well, in the County's office construction. The massive C & P complex on US 29 will strengthen that highway's image as a commercial/industrial area, as well as a major residential growth corridor.

Initial apprehensions concerning office overbuilding have been eased, but not entirely eliminated, by most recent tenanting experience. Indications are that 1.2 million square feet were leased in 1982. This suggests the County is capable of a more rapid rate of absorption than previously believed, i.e., 800,000 to 900,000 square feet a year. A recovering national economy and County unemployment of little more than 3 percent have reportedly contributed to heightened tenant interest, particularly for Metro-situated structures.

A recent County survey of office space showed a vacancy rate of 7.1 percent (1.6 million square feet), an amount which is higher than average but substantially below the levels, say, of the Chicago and Houston areas and the eastern downtown section of Washington, D.C.

Retail Space

The continuing growth in the number of County households generates a need for more retail outlets, particularly those of "convenience" nature. These serve the day-to-day shopping needs of new and growing neighborhoods in the County's major growth areas.

Last year's CPP pointed out that the County's need for regional shopping centers, which serve "shoppers goods" needs, i.e., durable goods such as furniture, appliances and clothing, had been saturated with the completion of Lakeforest Mall in Gaithersburg.

MONTGOMERY COUNTY NON-RESIDENTIAL CONSTRUCTION
1979 - 1982

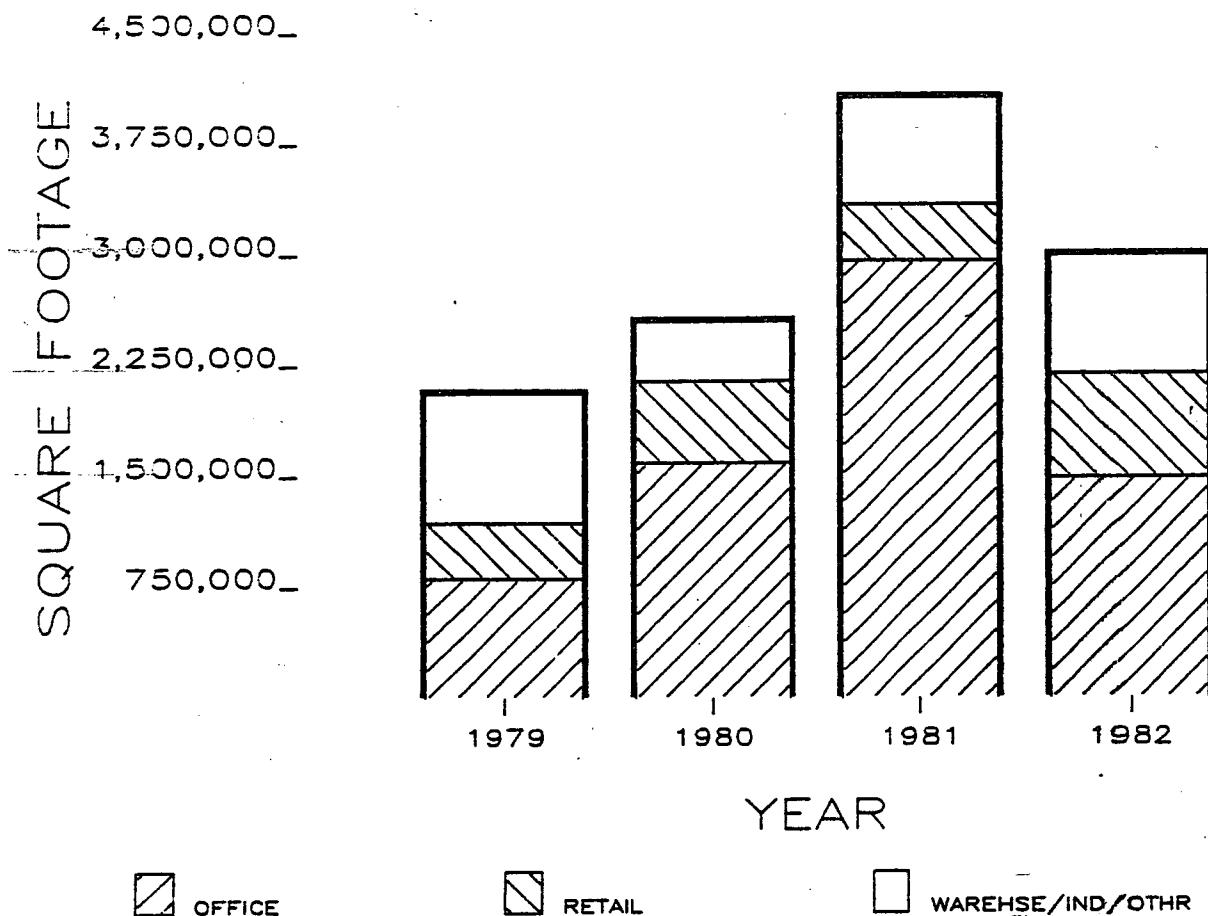


TABLE 21

MONTGOMERY COUNTY SQUARE FEET NON-RESIDENTIAL CONSTRUCTION
1979-1982

	Sq. Ft. Office	Sq. Ft. Retail	Sq. Ft. Warehouse/ Industrial/ Other	Sq. Ft. Total
1979	812,204	378,526	877,854	2,068,584
1980	1,598,158	554,174	404,924	2,557,256
1981	2,965,365	379,961	722,431	4,067,757
1982	1,496,592	702,878	800,948	3,000,418
Total	6,872,319	2,015,539	2,806,157	11,694,015

Source: Montgomery County Planning Board, Research Division. Compiled from data provided by the State Department of Assessments and Taxation.

Developer and investor interest in new shopping center development also diminished in the face of reduced regional sales and the reluctance of major department stores to provide "anchors" for new and additional centers during the last two economic recessions.

The regional shopping center saturation, two recessions, and the vastly reduced new homebuilding activity of 1981 contributed to a large-scale cutback in new retail space construction in 1981. However, with the start of economic recovery in the latter half of 1982 and also with restoration of local consumer confidence as federal employment uncertainties largely abated, retail construction activity picked up again. Somewhat over 700,000 square feet of new retail space were developed in 1982, and this constituted a more than 80 percent increase over 1981's activity.

These 700,000 square feet were represented in 22 buildings, generally evenly distributed among the County growth areas. The Gaithersburg Study Area received the most retail development, almost 300,000 square feet and over 40 percent of the total. This share is consistent with Gaithersburg's role as the County's major residential growth area.

The average size of the 22 retail structures amounted to some 32,000 square feet. This size can be related to the 40,000-50,000 square feet required for a full service supermarket. Therefore, it is apparent that the retail development was largely represented by smaller outlets intended to serve neighborhood convenience buying needs, with an admixture of apparel and houseware outlets targeted to a subregional market.

Two retail complexes have dominated the above activity, and these can be classified as "community," or "discount theme" centers. One is situated on the US 29 Corridor, at Briggs Chaney Road, across from the Montgomery County Auto Park. The other is located adjacent to the Lakeforest Mall in Gaithersburg. Both feature discount and off-price outlets, e.g., linens, auto supplies, books.

Warehouse, Industrial and Other

This construction category is residual in nature, and it includes such development as hospitals, warehouses, and factory buildings. The white collar/services/government nature of the Washington economy has channeled this residual development activity predominantly into production of warehouse space. These structures have proven especially adaptable to alternative uses. In addition to traditional storage and distributor functions, they may serve retail activities, custom kitchen and bath installation, auto body repair, and light assembly and processing activities, the last often occurring in association with incubator industry growth.

Last year's CPP report indicated a strong, continuing demand for warehouse space and parallel willingness of area investors to support such development. Activity in 1982 provided some 800,000 square feet of warehouse space, and this was an 80,000 square foot increase over 1981's activity. The average size of each structure was just under 30,000 square feet. It is expected that 1983 activity will match, if not exceed, the 1982 production.

The Gaithersburg area, as in the case of retail space development, claimed the largest share of industrial/warehouse space production, 305,000 square feet, or almost 39 percent of the 1982 County total.

Employment

Cooperative Forecast

The Planning Board works cooperatively with COG in making cooperative forecasts of population, household, and employment growth. Use of uniform benchmark data and analytical procedures minimizes potential forecasting errors, both regionally and for individual jurisdictions.

The recently completed Round 3 Cooperative Forecast shows that for the 1980-1985 period "at place" employment (i.e., jobs located within Montgomery County) will grow at an average of 5,800 jobs a year. Given today's economic resurgence, it is unlikely that the job growth rate will be any lower. The subsequent five year forecasting period, 1985-1990, will see substantially larger increases, with an intermediate forecast average annual growth of 7,200 jobs and an 8,800 high forecast annual average.

The higher 1985-1990 averages reflect expectations of moderate economic growth for the region; also, Federal employment levels are expected to stabilize and, possibly, to grow moderately as previous years' defense contractual commitments advance to development and implementation.

Three County Employment Dynamics

Within Montgomery County, three major employment dynamics have been recognized.

1. The County is rapidly emerging as an employment center, shedding its previous image as a "bedroom suburb." The 1980 Census showed that the County provided 302,000 in-place jobs, as compared to a resident labor force of 299,000. If, by magic wand, jobs and personnel could be matched, every County resident work force member could have a job in the County and there would still be 3,000 jobs leftover for non-residents.
2. Parallel with the above, the County is providing its work force with an increasing number and proportion of in-place jobs. In 1960, some 46 percent of the work force worked in the County; by 1980 the percentage had grown to over 58 percent. Job growth in the County also increased the number of in-commuters. Although their percentage has declined, their actual number increased from 100,000 to 124,000 between 1970 and 1980.
3. The County has been steadily gaining in its share of total metro area jobs. Between 1979-1980 its share rose from 15.6 percent to 17.8 percent. This growth reflected, for most of the decade, capture of about one-fourth of total regional job increases.

Service Jobs Are Dominating

Within the County, service and retail jobs dominate total employment, with the former providing in 1981 nearly 28 percent of total at-place jobs and the latter nearly 17 percent. Services, however, have been the dynamic growth sector. As shown in Table 20, retail jobs actually declined by one percent in 1979-1981. In contrast, service jobs increased by 12,000, an annual average gain of 2 percent.

Service occupations, which run the gamut from janitors and porters to computer programmers and to doctors and lawyers, generated about one-third of total County job growth between 1975-1979. For the briefer two year period, 1979-1981, this share of growth jumped to almost 88 percent. The service sector has also been the largest growth component in the national economy. Given the unique governmental and private national headquarters character of the Washington region, Montgomery County is likely to outpace national service sector employment gains.

The Maryland Department of Human Resources provides employment data only for the combined Montgomery, Prince George's, and Charles County area, i.e., the Maryland portion of the Washington, D.C. SMSA. These show, for the period June 1981 to May 1982, that the services job sector provided nearly 6,000 additional jobs in the three County area. This growth took place in the face of a 5,000 total job loss for the area. This experience further substantiates that service jobs are the major economic driving force in Montgomery County.

Federal Jobs

The number of federal jobs in the County (including military) stayed virtually the same between 1979-1981, but their share of total County jobs fell modestly, from 15.1 to 14.4 percent. Federal job losses in the region reportedly occurred most heavily in regulatory agencies, and these are primarily located in the District of Columbia.

The administration's longer-range programs to reduce leasing of privately owned space and to house its personnel within federally owned buildings make a reduction of at-place federal jobs within Montgomery County. Non-defense federal buildings are centered in downtown Washington, D.C. New additions to the federal building inventory might cluster around existing downtown headquarters complexes. On the other hand, the County may find more federal employees working in existing federal reservations such as the Naval Surface Weapons Center, the National Institute of Health, and the National Bureau of Standards.

Finance, Insurance and Real Estate

There was nearly a 1,000 job drop in finance, insurance and real estate. This 1979-1981 period was noteworthy in the attrition of area real estate firms, when a combination of national economic recessions and extraordinarily high mortage interest rates very substantially reduced existing home sales. On the national level, existing home sales declined from 3.8 million to 2.4 million, a fall of 37 percent. In Montgomery County, the number of existing homes that were sold declined by an estimated 40 percent, paralleling the national experience.

Job Growth Locational Patterns Inside Montgomery County

At-place jobs are clustered in major employment areas such as Bethesda, North Bethesda, and the I-270 Corridor. The I-270 area, while currently providing fewer jobs than the older, more mature suburbs of Bethesda and North Bethesda, is expected to register the largest numerical job gain between 1980-1985, 12,100 in all, and a 28 percent increase. Bethesda, with the highest at-place job concentration in the County in 1980, will continue to grow, providing 2,100 additional jobs in the five-year period, an increase of 2.8 percent. The North Bethesda area, characterized by its recent office building boom, is expected to gain 7,900 jobs, nearly an 11 percent gain (Table 29 in Forecast section).

MONTGOMERY COUNTY AT-PLACE EMPLOYMENT
MARCH 1981

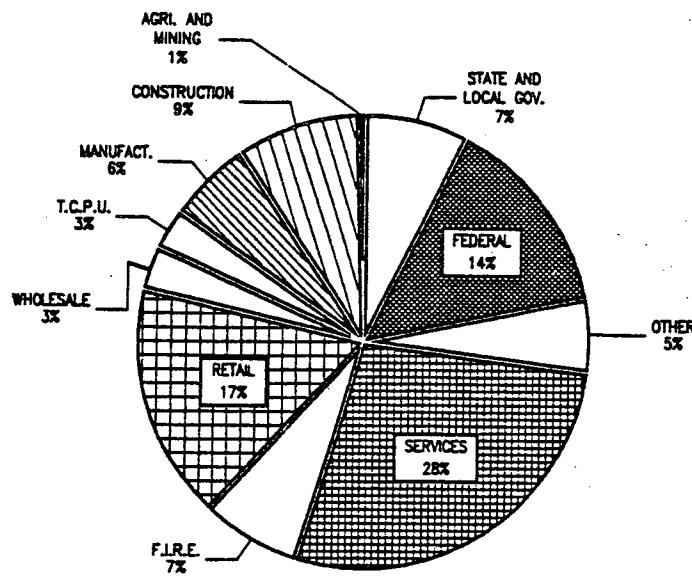


TABLE 22
MONTGOMERY COUNTY AT-PLACE EMPLOYMENT¹
MARCH 1979 - MARCH 1981

Major Industrial Sectors	Employment 1979	Employment 1981	Employment Change 1979-1981	
			Number	Percent
Agriculture & Mining ²	1,644	1,673	29	1.76
Construction ²	26,768	27,632	864	3.23
Manufacturing ²	17,248	18,398	1,150	6.67
Transportation, Communication & Public Utilities ²	8,317	8,986	669	8.04
Retail Trade ²	52,645	52,141	-504	-0.96
Finance, Insurance & Real Estate	23,307	22,233	-1,074	-4.61
Services ²	73,817	85,886	12,069	16.35
Other ² (Self employed nonclassifiable)	16,200	16,200	0	0
Federal ³ (Including military)	44,895	44,663	-232	-0.52
State and Local ⁴	23,400	23,000	-400	-1.71
Total At-Place Employment	296,633	310,356	13,723	

¹ Jobs located within Montgomery County.

² County Business Patterns, U.S. Department of Commerce, Bureau of the Census.

³ County Business Patterns, M-NCPCC estimate.

⁴ National Capital Planning Commission.

⁵ Montgomery County Planning Board, Research Division estimate, and State of Maryland employment data.

Montgomery County's Job Growth Advantages

Montgomery County enjoys several advantages which will help to maintain its favorable growth position within the metro economy. The County has a well-educated labor force; 40 percent of its population 25 years of age and over in 1980 had a college degree. The 1980 Census showed that 30 percent of the resident labor force worked in professional and technical jobs, as compared to 24 percent for the metro area. The presence of these professionals and technicians will induce numerous high-tech firms to seek out County locations, prepared to compete with present employers for these workers.

Not only does a well-educated and well-trained County labor force provide a locational inducement for such firms, many of whom are of "footloose" nature, but equally important, the start-up of new and additional high-tech firms has characteristically and frequently stemmed from the entrepreneurial drive of more adventuresome employees working for these existing firms.

Montgomery County, indeed, has been successful in attracting the kinds of new industries that hold potential for greatest comparative growth. These generally have been categorized into two groups, information and conservation. In the first group are firms engaged in computers and in transmission technologies. In the latter are firms in energy conservation, waste disposal, and health maintenance. These high-tech firms have tended to cluster next to each other, and Montgomery's early start can be viewed as providing desired nuclei for such future clustering.

The role of I-270 as a magnet for County high-tech industry growth has been recognized. Supplementing this has been the growing acceptance of US 29 as a site for

IV FORECASTS

COMPREHENSIVE
PLANNING
POLICIES

FORECAST

The growth forecasts for Montgomery County were revised recently through the year 2000. The revisions are the product of a cooperative effort of the Planning Directors Technical Advisory Committee at the Washington Council of Governments (COG). The participants included the COG member jurisdictions, the National Capital Planning Commission (NCPC), and the Maryland Department of State Planning.

These revisions represent the third round of a cooperative forecasting process which began in 1975. The concept of a regional cooperative effort was initiated by the staff of the Montgomery County Planning Board, and we continue to maintain a leadership role in this work effort.

The Round II cooperative forecast was adopted in 1978. The 1980 Census indicated that the declines in household size had been even more dramatic than those anticipated. The forecast presented in the 1982 CPP varied from the Round II forecast in order to reflect the most current information available. The following discussion uses Round II (not the 1982 CPP forecast) as a point of reference.

The major accomplishments of the Round 3 effort are:

Continuing reduction of the "puffery" of earliest forecasts. For example, the Round 2 forecast reduced the 1995 Round 1 regional population forecast by 270,000. The Round 3 forecast lowers the 1995 estimate by an additional 565,000.

The Maryland Department of State Planning has agreed to adopt the Round 3 forecasts for use by all state agencies. This decision resolves a previous controversy concerning which forecasts it should use for both Montgomery and Prince George's Counties.

A new regional forecasting model was adopted and implemented. The model is designed to test alternative growth assumptions. The development of the model was initiated by NCPC and was an outgrowth of its study of the impact of declines in federal employment. The model resides on the Montgomery County Planning Board's computer.

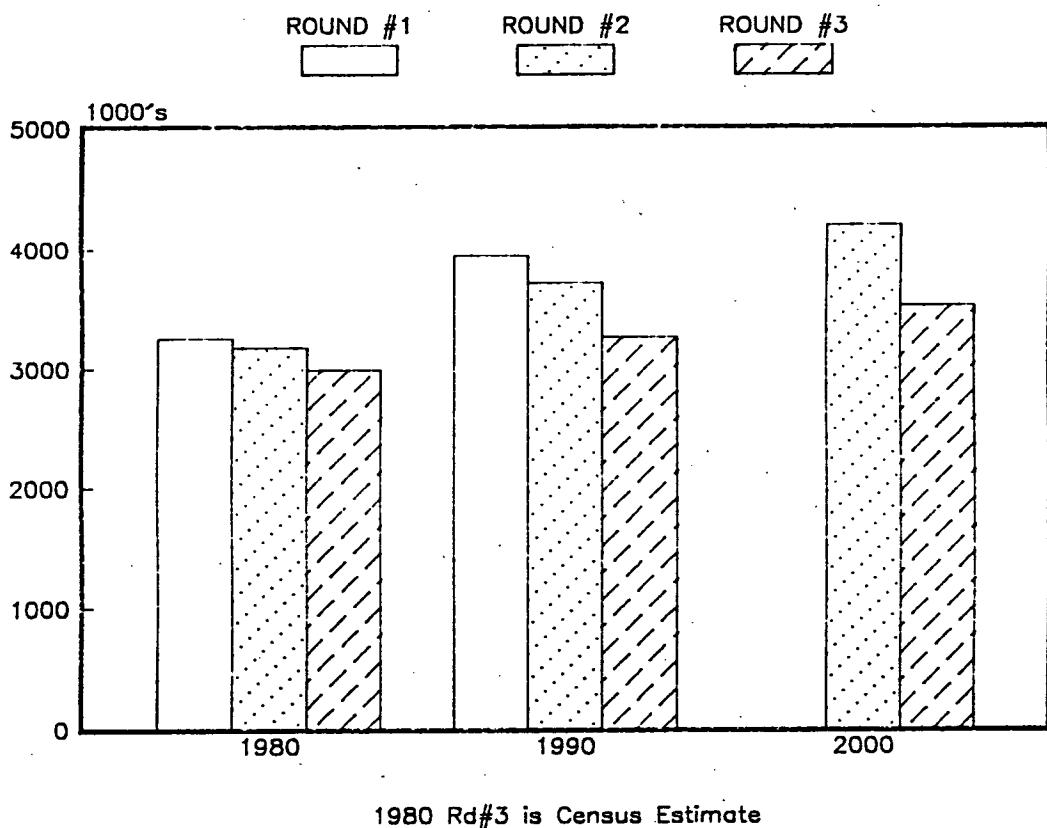
Regional Forecasts--Trends Considered

The Round 3 forecasts take into account such significant economic and demographic trends as:

- 1) Declining Federal Employment and the Offsetting Growth of the Private Sector. Federal employment grew by only 23,000 during the 1970's compared to a 104,000 increase in the 1960's. In contrast, private sector employment growth has shown steady, continued increases; 305,000 in the 1970's as compared to 273,000 in the 1960's. Federal employment has, in fact, declined since 1980, in accordance with current administration policy.

COMPARISON OF COG FORECASTS ROUNDS 1,2,&3

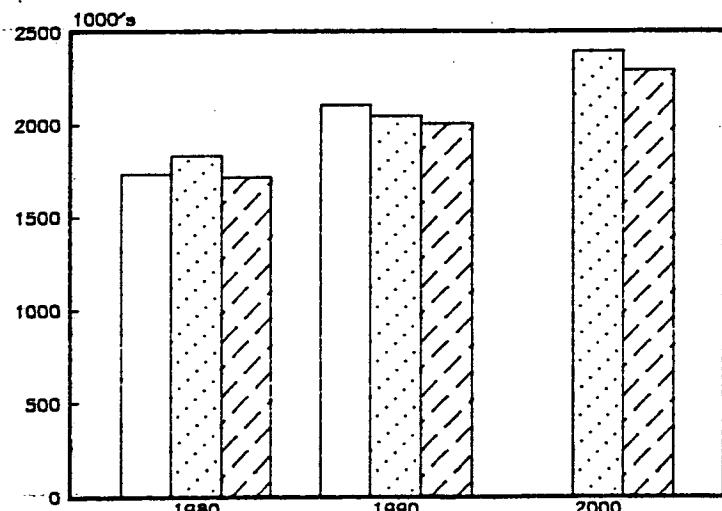
Cog Region, Intermediate Population Forecast^a



COMPARISON OF COG FORECASTS ROUNDS 1,2,&3

Cog Region, Intermediate Employment Forecast

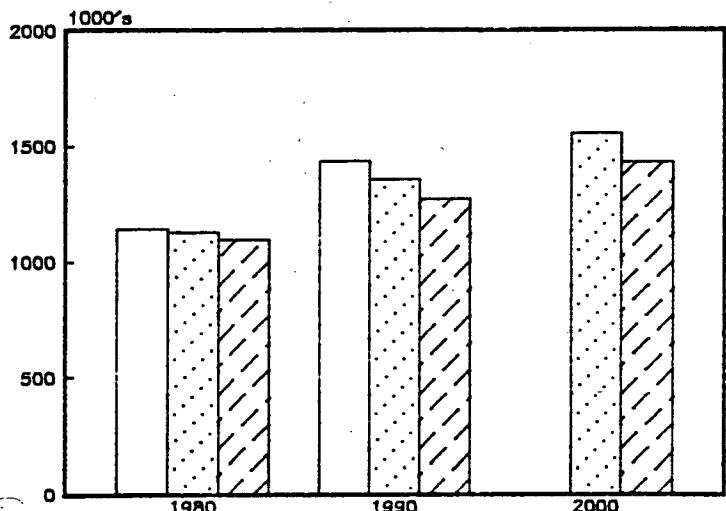
ROUND #1 ROUND #2 ROUND #3



COMPARISON OF COG FORECASTS ROUNDS 1,2,&3

Cog Region, Intermediate Household Forecast

ROUND #1 ROUND #2 ROUND #3



2) Increased Female Labor Force Participation. The 1970's witnessed a dramatic change in female labor force participation. For example, by 1980, 50.3 percent of all women with children under six years old were in the labor force, compared to only 26.4 percent in 1970.

Increased female labor force participation contributed indirectly to lower population growth rates in the 1970's. With more women working, the average number of workers per household increased. During the 1970's this increase in workers per household reduced the need to attract immigrants to the Washington region to be employed in the expanding economy.

3) Growth Outside of the COG Region. A large number of persons employed in the COG region live outside the region. The number of in-commuters from outside the region increased from 4,000 in 1960, to 21,000 in 1970, and to 95,000 in 1980. New employment opportunities located in the outlying Washington suburbs have facilitated in-commuting from outside the COG region. For example, travel times to employment centers in the I-270 and US 29 Corridors from Frederick, Howard, and Anne Arundel Counties are comparable to commuting time from many housing locations within the COG region itself.

4) Declining Average Household Size. Between 1960-1980, average household size declined by 20 percent, from 3.26 to 2.67 persons. The declining birthrate, the increase in non-family households, particularly among single persons, the aging of the population; and the increase in the divorce rate have contributed to the decline in average household size.

Nationally, the general fertility rate (births per 1,000 women aged 15-44) decreased by 44 percent between 1960 to 1976.

In the COG region, the number of non-family households increased by over 65 percent in the 1970's. The vast majority of all non-family households consist of persons who live alone (81 percent), and these include elderly survivors as well as younger single persons.

The average age of first marriage has been rising for both males and females. The divorce rate has doubled in the nation since 1950. Both contribute to smaller average household size. In the first instance, single person householders retain that status for a longer period. In the second instance, a divorced family becomes two smaller units.

Average household size will continue to decline for several decades, but the rate of decline will be less than in the recent past. The greatest impacts of demographic trends on average household size have already been experienced. Additional, dramatic percentage changes in fertility rates, divorce rates, and age of first marriage are not likely to occur. Major unforeseen economic and/or societal changes would be required to reverse demographic trends sufficiently for average household size to stabilize or increase.

5) The Current Baby "Boomer." Since 1976, the fertility rate has been increasing slightly, and so has the annual number of births. Some demographers refer to this event as a distant and minor echo of the post World War II "baby boom."

TABLE 23
MONTGOMERY COUNTY DEVELOPMENT FORECAST
ROUND 3 COG COOPERATIVE FORECAST

		<u>Persons</u>				
		<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>
High			620,000	660,000	719,000	777,600
Intermediate	579,000	598,300	634,400	669,600	700,000	
Low		580,600	592,700	607,600	623,100	
		<u>Households</u>				
High		232,700	262,700	292,700	317,700	
Intermediate	206,793	230,400	252,900	273,200	288,200	
Low		228,200	243,200	256,500	265,700	
		<u>Employment</u>				
High			375,000	410,000	435,000	
Intermediate	302,000	331,000	360,000	385,000	410,000	
Low			340,000	355,000	370,000	

Source: Montgomery County Planning Board, Research Division.

TABLE 24
PERCENTAGE DISTRIBUTION OF MONTGOMERY COUNTY
POPULATION BY AGE - 1970-80-90

<u>Age Group</u>	<u>1970</u>	<u>1980</u>	<u>1990</u> ¹
0 - 4	8.2	5.8	7.1
5 - 14	21.6	15.0	12.0
15 - 24	16.1	16.8	14.3
25 - 34	13.3	17.4	16.2
35 - 44	13.4	14.1	15.6
45 - 64	21.2	22.1	24.9
65+	6.2	8.8	9.9
	100.0	100.0	100.0

¹ Excludes persons in group quarters.

Source: U.S. Census 1970-1980, and Montgomery County Planning Board, Research Division.

According to projections by the U.S. Census Bureau, general fertility rate increases are not expected to continue beyond the late 1980's. By the 1990's the proportion of women in the most fertile age groups (20-29) will begin to decline. On the other hand, continued increases in fertility rates for women over 30 years old and/or changes in life styles could extend the baby boomlet into the 1990's.

Forecast Scenarios

Low Forecast

The low forecast assumes that federal employment remains the dominant driver of growth in the COG region. Employment in other sectors of the economy will derive from established historical relationships among federal employment, local population growth, and national employment growth by industry. Federal employment is assumed to decline through 1987, consistent with current administration policies, and then stabilize at a lower plateau.

Lower fertility, in-commuting, and labor force participation rates are additional assumptions applied in this scenario.

High Forecast

The high forecast posits that major changes occurred in the structure of the regional economy during the past decade. Federal employment is no longer the dominant employment driver. Employment growth in business services, communications, and manufacturing has now become largely independent of federal job growth in the COG region and in the rest of the nation.

Having capitalized upon its role as the seat of national government, the region has now matured into a broad-based, comprehensive center for government, business, and nonprofit corporations. The high caliber of the labor force recruited to support federal and private government related employment sectors has become, in itself, a magnet for the location of new firms who wish to share this labor pool.

The importance of the federal presence is not questioned in this scenario. What has been challenged is the previous emphasis upon the direct link between federal employment and job growth in the regional economy.

This high forecast scenario assumes that the administration's policies to reduce federal employment will continue through to 1984. After 1984, federal employment will resume the modest growth trends reflected in the 1967-1980 period.

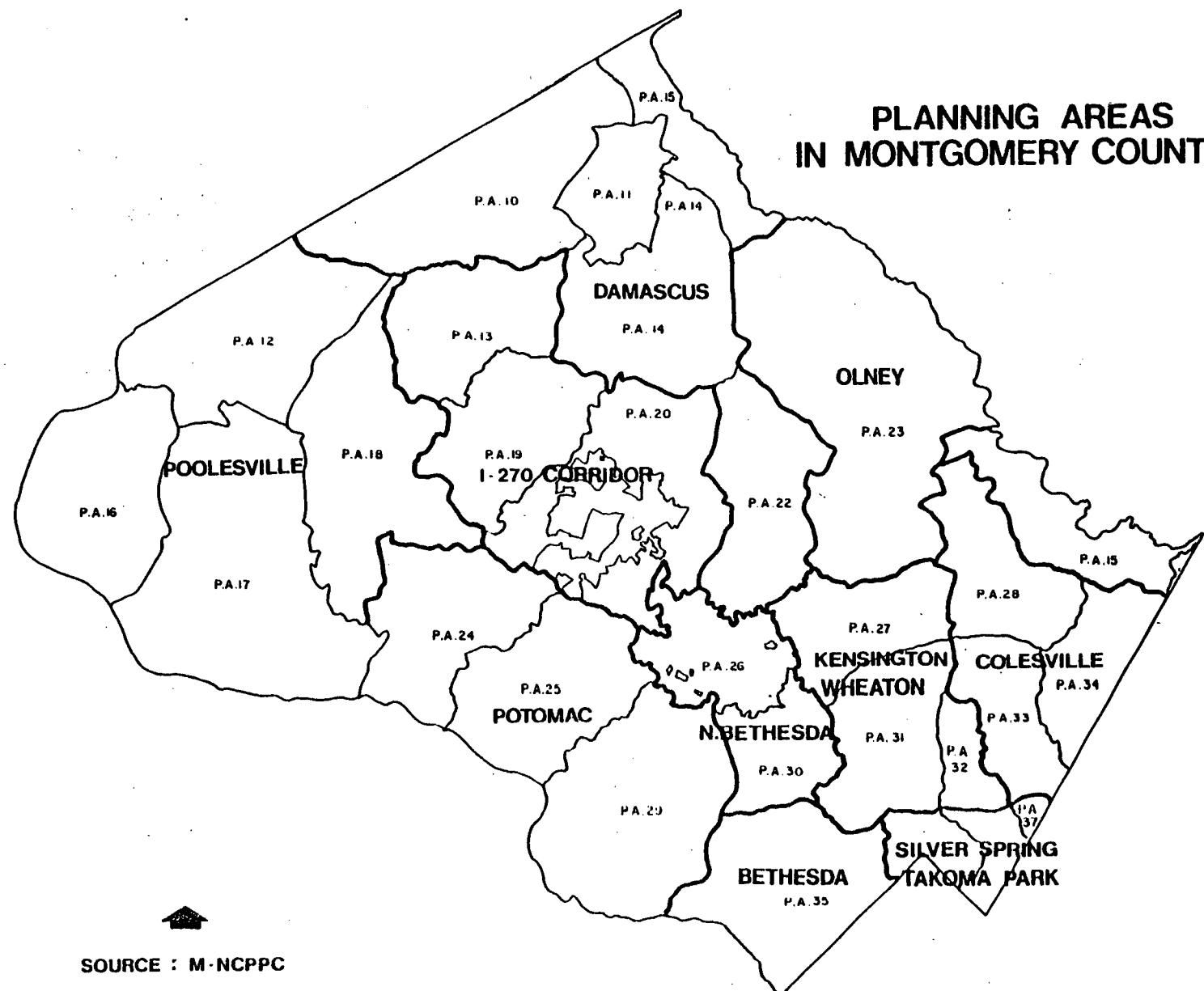
Higher fertility, in-commuting, and labor force rates are applied in this scenario.

Intermediate Forecast

A "most probable" intermediate scenario was selected as representing a reasonable conciliation between the high and low scenario ranges.

PLANNING AREAS IN MONTGOMERY COUNTY

III



SOURCE : M-NCPPC

**ROUND 3 COOPERATIVE FORECAST
HIGH SCENARIO
MONTGOMERY COUNTY**

Planning Areas	POPULATION				HOUSEHOLD			
	1980	1985	1990	1995	1980	1985	1990	1995
SILVER SPRING	54,600	55,000	54,700	56,100	23,852	24,602	25,702	26,902
36 Silver Spring	29,700	31,200	32,200	33,800	14,015	14,565	15,515	16,515
37 Takoma Park	24,900	23,800	22,500	22,300	9,837	10,037	10,187	10,387
BETHESDA	80,400	77,800	77,900	80,400	31,934	33,334	34,934	36,234
35 Bethesda	80,400	77,800	77,900	80,400	31,934	33,334	34,934	36,234
NORTH BETHESDA	75,800	75,900	77,100	79,700	26,514	28,764	31,414	33,464
26 Rockville	45,300	43,200	41,600	40,600	14,788	15,588	16,338	16,288
30 N. Bethesda	30,500	32,700	35,500	39,100	11,726	13,176	15,076	16,876
KENSINGTON-WHEATON	155,350	150,000	146,500	149,700	55,102	57,552	59,952	62,502
27 Aspen Hill	47,750	46,600	46,200	48,100	16,703	18,053	19,453	20,753
31 Wheaton	75,500	72,300	70,100	71,100	26,733	27,533	28,283	29,283
32 Kemp Mill	32,100	31,100	30,200	30,500	11,666	11,966	12,216	12,466
I-270 CORRIDOR	73,600	101,700	128,300	158,300	26,928	36,853	48,828	61,708
13 Clarksburg	1,200	1,200	1,100	1,500	371	396	421	551
19 Germantown	10,400	21,600	35,300	52,300	3,733	7,233	12,333	18,783
20/21 Gaithersburg	62,000	78,900	91,900	104,500	22,824	29,224	36,074	42,374
COLESVILLE	46,900	56,500	66,000	76,100	15,489	18,989	23,689	28,289
28 Cloverly	11,400	12,500	13,600	15,500	3,298	3,848	4,548	5,348
33 White Oak	26,000	26,700	28,800	30,900	8,921	9,871	11,071	12,071
34 Fairland	9,500	17,300	23,600	29,700	3,270	5,270	8,070	10,870
POTOMAC	48,550	52,800	55,100	59,800	14,210	16,760	19,460	22,110
24 Darnestown	4,800	5,800	6,800	7,900	1,334	1,884	2,384	2,884
25 Travilah	5,850	7,000	8,300	9,700	1,717	2,067	2,917	3,817
29 Potomac	37,900	40,000	40,000	42,200	11,159	12,809	14,159	15,409
OLNEY	17,100	19,700	21,500	24,100	4,777	5,777	6,977	8,227
23 Olney	17,100	19,700	21,500	24,100	4,777	5,777	6,977	8,227
DAMASCUS	19,300	23,300	26,100	29,000	5,748	7,738	9,328	10,738
10 Bennett	3,400	3,300	3,200	3,300	1,030	1,095	1,115	1,215
11 Damascus	3,800	5,800	6,900	7,200	1,140	1,925	2,700	3,000
14 Goshen	4,000	5,000	6,000	7,200	1,220	1,670	1,935	2,345
15 Patuxent	3,700	3,700	3,600	3,800	1,130	1,220	1,300	1,400
22 Rock Creek	4,400	5,500	6,400	7,500	1,228	1,828	2,278	2,778
POOLESVILLE	7,400	7,300	6,800	6,700	2,239	2,324	2,409	2,519
12 Dickerson	1,600	1,600	1,500	1,500	473	498	523	553
16 Martinsburg	500	500	500	600	157	177	197	222
17 Poolesville	4,100	4,000	3,600	3,500	1,249	1,269	1,289	1,319
18 Lower Seneca	1,200	1,200	1,200	1,100	360	380	400	425
TOTAL COUNTY	579,000	620,000	660,000	719,900	206,793	232,693	262,693	292,693

Source: Montgomery County Planning Board, Research Division.

**ROUND 3 COOPERATIVE FORECAST
INTERMEDIATE SCENARIO
MONTGOMERY COUNTY**

Planning Areas	POPULATION				HOUSEHOLD			
	1980	1985	1990	1995	1980	1985	1990	1995
SILVER SPRING	54,600	53,400	53,300	53,500	23,852	24,502	25,002	25,552
36 Silver Spring	29,650	30,300	31,000	31,800	14,015	14,515	14,915	15,415
37 Takoma Park	24,950	23,100	22,300	21,700	9,837	9,987	10,087	10,137
BETHESDA	80,400	75,600	76,800	78,700	31,934	33,234	34,284	35,284
35 Bethesda	80,400	75,600	76,800	78,700	31,934	33,234	34,284	35,284
NORTH BETHESDA	75,800	73,600	74,700	77,200	26,514	28,564	30,414	32,264
26 Rockville	45,300	42,000	41,300	41,900	14,788	15,538	16,188	17,038
30 N. Bethesda	30,500	31,600	33,400	35,300	11,726	13,026	14,226	15,226
KENSINGTON-WHEATON	155,350	145,800	144,600	145,900	55,102	57,352	59,052	60,802
27 Aspen Hill	47,750	45,200	45,100	46,000	16,703	17,953	18,953	19,853
31 Wheaton	75,500	70,400	69,500	69,900	26,733	27,483	27,983	28,683
32 Kemp Mill	32,100	30,200	30,000	30,000	11,666	11,916	12,116	12,266
I-270 CORRIDOR	73,600	97,400	119,200	135,100	26,928	36,149	45,709	53,589
13 Clarksburg	1,200	1,100	1,100	1,300	371	392	402	482
19 Germantown	10,400	20,000	30,600	39,800	3,733	6,833	10,933	14,833
20/21 Gaithersburg	62,000	76,300	87,500	94,000	22,824	28,924	34,374	38,274
COLESVILLE	46,900	54,100	61,000	67,700	15,489	18,689	22,089	25,289
28 Cloverly	11,400	12,000	13,100	14,400	3,298	3,798	4,398	4,998
33 White Oak	26,000	25,700	27,600	29,800	8,921	9,771	10,671	11,571
34 Fairland	9,500	16,400	20,300	23,500	3,270	5,120	7,020	8,720
POTOMAC	48,550	50,400	53,000	56,500	14,210	16,462	18,512	20,412
24 Darnestown	4,800	5,500	6,300	7,000	1,334	1,835	2,235	2,585
25 Travilah	5,850	6,400	7,600	9,000	1,717	1,968	2,418	2,968
29 Potomac	37,900	38,500	39,100	40,500	11,159	12,659	13,859	14,859
OLNEY	17,100	18,900	20,900	23,100	4,777	5,677	6,777	7,877
23 Olney	17,100	18,900	20,900	23,100	4,777	5,677	6,777	7,877
DAMASCUS	19,300	22,100	24,300	25,600	5,748	7,479	8,724	9,554
10 Bennett	3,400	3,200	3,100	3,000	1,030	1,080	1,105	1,130
11 Damascus	3,800	5,400	6,400	6,700	1,140	1,840	2,320	2,510
14 Goshen	4,000	4,800	5,400	5,900	1,220	1,620	1,940	2,200
15 Patuxent	3,700	3,500	3,600	3,600	1,130	1,210	1,280	1,335
22 Rock Creek	4,400	5,200	5,800	6,400	1,228	1,729	2,079	2,379
POOLESVILLE	7,400	7,000	6,600	6,300	2,239	2,290	2,335	2,375
12 Dickerson	1,600	1,500	1,400	1,300	473	493	503	513
16 Martinsburg	500	500	500	500	157	167	177	187
17 Poolesville	4,100	3,900	3,600	3,400	1,249	1,260	1,270	1,280
18 Lower Seneca	1,200	1,100	1,100	1,100	360	370	385	395
TOTAL COUNTY	579,000	598,300	634,400	669,600	206,793	230,398	252,898	272,098

Source: Montgomery County Planning Board, Research Division.

ROUND 3 COOPERATIVE FORECAST
LOW SCENARIO
MONTGOMERY COUNTY

Planning Areas	POPULATION				HOUSEHOLD			
	1980	1985	1990	1995	1980	1985	1990	1995
SILVER SPRING	54,600	52,100	51,900	51,700	23,852	24,412	24,712	25,062
36 Silver Spring	29,650	29,300	30,000	30,400	14,015	14,465	14,715	15,015
37 Takoma Park	24,950	22,600	21,900	21,300	9,837	9,947	9,997	10,047
BETHESDA	80,400	73,600	73,700	75,700	31,934	33,134	33,884	34,884
35 Bethesda	80,400	73,600	73,700	75,700	31,934	33,134	33,884	34,884
NORTH BETHESDA	75,800	72,600	70,700	70,200	26,514	28,414	29,464	30,264
26 Rockville	45,300	41,600	39,900	38,700	14,788	15,538	16,088	16,338
30 N. Bethesda	30,500	31,000	30,800	31,500	11,726	12,876	13,376	13,926
KENSINGTON-WHEATON	155,350	141,700	137,700	136,400	55,102	56,852	57,752	58,602
27 Aspen Hill	47,750	43,800	42,000	41,700	16,703	17,603	18,003	18,453
31 Wheaton	75,500	68,600	67,000	66,200	26,733	27,383	27,783	28,083
32 Kemp Mill	32,100	29,300	28,700	28,500	11,666	11,866	11,966	12,066
I-270 CORRIDOR	73,600	96,200	109,200	119,200	26,928	35,593	42,248	48,003
13 Clarksburg	1,200	1,100	1,000	1,000	371	386	391	396
19 Germantown	10,400	19,300	25,100	31,300	3,733	6,583	8,933	11,583
20/21 Gaithersburg	62,000	75,800	83,100	86,900	22,824	28,624	32,924	36,024
COLESVILLE	46,900	50,700	53,700	56,700	15,489	18,339	20,539	22,439
28 Cloversly	11,400	11,300	11,700	12,200	3,298	3,748	4,148	4,548
33 White Oak	26,000	24,000	24,800	25,900	8,921	9,621	10,221	10,771
34 Fairland	9,500	15,400	17,200	18,600	3,270	4,970	6,170	7,120
POTOMAC	48,550	47,900	48,900	50,800	14,210	16,260	17,910	19,410
24 Darnestown	4,800	5,300	5,800	6,000	1,334	1,784	2,084	2,284
25 Travilah	5,850	6,000	6,700	7,600	1,717	1,917	2,267	2,667
29 Potomac	37,900	36,600	36,400	37,200	11,159	12,559	13,559	14,459
OLNEY	17,100	17,900	18,700	19,000	4,777	5,577	6,377	6,977
23 Olney	17,100	17,900	18,700	19,000	4,777	5,577	6,377	6,977
DAMASCUS	19,300	21,000	21,900	21,900	5,748	7,288	8,063	8,488
10 Bennett	3,400	3,100	2,900	2,900	1,030	1,063	1,085	1,105
11 Damascus	3,800	5,300	5,700	5,700	1,140	1,815	2,095	2,205
14 Goshen	4,000	4,300	4,800	4,900	1,220	1,540	1,760	1,890
15 Patuxent	3,700	3,500	3,400	3,200	1,130	1,190	1,245	1,260
22 Rock Creek	4,400	4,900	5,100	5,200	1,228	1,678	1,878	2,028
POOLESVILLE	7,400	6,800	6,300	6,000	2,239	2,274	2,294	2,314
12 Dickerson	1,600	1,500	1,400	1,300	473	488	493	498
16 Martinsburg	500	500	500	500	157	162	167	172
17 Poolesville	4,100	3,700	3,400	3,200	1,249	1,254	1,259	1,264
18 Lower Seneca	1,200	1,100	1,000	1,000	360	370	375	380
TOTAL COUNTY	579,000	580,600	592,700	607,600	206,793	228,143	243,243	256,443

Sources: Montgomery County Planning Board, Research Division.

Population growth in the 1980's is expected to exceed the modest numerical growth of the 1970's. The population under 16 will not decline throughout the 1980's, as it did in the 1970's. Female participation in the labor force will increase, but at a slower rate; this, in turn, will encourage a higher level of in-migration to the COG region.

In the 1990's, the current baby boomlet will have run its course. This, combined with the effects of population aging and the spread of economic activity to counties outside of the COG region, will lead to lower rates of population growth for the following two decades.

Employment growth is expected to remain strong, but will be less than in the 1970's. The communication, services, and "high-tech" industry sectors will show substantial growth, while declines are likely in the federal, state, and local government sectors. Retail employment is expected to experience slow growth, in contrast to dramatic growth in the 1970's. In the early 1970's there was a deficit of retail establishments, compared to the potential associated with increased numbers of households and parallel, high household incomes. This deficit no longer exists.

Household growth will more closely follow employment growth. With lower increases in female labor force participation rates and low unemployment rates, there will be a greater reliance upon in-migration to fill new jobs in the COG region.

MONTGOMERY COUNTY COG ROUND 3 FORECASTS

Population and Household Forecast

Population by age group is forecast using the Montogmery County Planning Board's Demographic Model. The Model simulates the population dynamics of aging, fertility, and mobility (given a base year population of 1980), and forecasts housing construction. The Model is calibrated upon information from the 1980 census, the Planning Board's 1977 Census Update Survey, and vital statistics from the Maryland Department of Health.

Housing Forecast

Montgomery County's growing employment base, as well as that of the entire COG region, is expected to help maintain a strong demand for new housing within the County. While the supply of vacant land available for development is limited in the inlying areas of the County, there is sufficient land for many decades of growth in the developing outlying parts of the County, including the I-270 and US 29 Corridors. Density diversity among the County's master plans provides flexibility for the home building industry to supply a wide range of housing types to the homebuying public. Substantial housing affordability gains have been advanced with economical, innovative townhouse development. The County's Moderate Priced Dwelling Unit Ordinance, supported by below-market interest rate financing program, has also helped to establish the County as a regional leader in providing affordable housing.

During the mid-to-late 1970's, the County's share of regional building permits declined because of the sewer moratorium. The County's share of residential building permits fell from 30 percent in 1970 to only 10 percent in 1974. With the lifting of the moratorium, the County's share of building permits increased steadily and reached 36 percent in 1982.

The housing forecast assumes that the County will increase its share of residential growth relative to the other large suburban jurisdictions, Prince George's and Fairfax Counties. The combined amount of growth forecast for the 1980's in the three large suburban jurisdictions is expected to be 25 percent less than in the 1970's. Montgomery County's growth is expected to remain relatively constant, while growth in the two other jurisdictions will decline.

The County's demand for housing is expected to be vigorous during the 1980's. The economic recessions of recent years, coupled with high mortgage interest rates, have limited the effective demand for housing. Numerous prospective first-time and trade-up buyers have been unable to participate effectively in the housing market and constitute a substantial pent-up demand. The local home building industry is preparing to meet this demand. A strong potential for increased housing production is reflected in the high levels of Planning Board Preliminary Plan and Record Plat activities and also in the number of sewer authorizations granted by the Washington Suburban Sanitary Commission (WSSC). Currently, outstanding sewer authorizations provide a potential for approximately 50,000 dwelling units; 15,000 detached, 22,000 townhouses, and 13,000 apartments. Since 1980, average annual housing unit completions are over 60 percent greater than the 1975 and 1979 averages.

Average Household Size

Average household size is forecast within the Demographic Model using the dynamic factors stated above and predicted changes in the age distribution of householders for the period 1981 to 1995. For the period beyond 1995, average household size is forecast independently of the Demographic Model. For this longer period of time, the decision was made to relate statistically, Montgomery County's average household size to the regional model's forecasts. The regional model's forecast is, in turn, statistically related to forecasts of national average household size.

Average household size is forecast to decline by 15 percent, to 2.35 persons, by the year 2000. This is below the 25 percent decline for the previous two decades.

The average household size decline from 3.65 in 1960 to 2.77 persons in 1980 was largely due to the aging and demographic characteristics of the post World War II baby boom generation. For example, the general fertility rate (the number of births per 1,000 women aged 15 to 44) in Montgomery County fell from 112.4 in 1960 to 49.0 in 1975. Since 1960, the combined effects of a lower birth rate, a higher divorce rate, a lower marriage rate, and large numbers of young persons leaving home to form independent households have contributed to a steep decline in average household size.

Population per household will decline at a lesser rate in the future because the major impacts of the above demographic shifts are largely complete. After 1975, the fertility rate stabilized for several years, and now, in fact, is increasing moderately. There are also signs that the divorce rate is falling. Most importantly, the largest proportion of the "baby boom" age group has already grown up and established independent households. The potential for continued household size declines from this last-mentioned cause has substantially diminished.

TABLE 28

**POPULATION BY AGE GROUPS AND BY GROUPED PLANNING AREAS
1980 CENSUS - 1990 INTERMEDIATE FORECAST**

	Bethesda/ Silver Spring (PA 35,36,37)	N.Bethesda/ Rockville (PA 26,30)	Kensington/ Wheaton (PA 27,31,32)	I-270 Corridor (PA 13,19, 20,21)	Colesville (PA 28,33,34)	Potomac (PA 24,25,29)	Olney (PA 23)	Damascus Poolesville (PA 10,11,12 14,15,16,17 18,22)	Total County
Household Population 1980	133,239	74,182	154,438	73,339	46,242	48,375	16,918	26,687	573,420
Percent Age 65+	13.8	7.4	9.8	4.0	7.6	4.2	4.2	5.8	8.7
Percent Age 45-64	24.0	23.0	24.2	12.8	25.2	24.2	16.0	12.8	22.1
Percent Age 35-44	12.8	13.8	12.4	14.3	14.8	18.8	20.9	16.7	14.1
Percent Age 25-34	18.0	17.1	17.0	25.9	13.7	10.2	14.5	16.8	17.4
Percent Age 15-24	15.1	18.0	17.5	17.8	18.5	16.1	15.1	15.8	16.8
Percent Age 5-15	11.6	15.0	13.6	16.5	15.6	21.3	22.8	19.7	15.1
Percent Age 0-4	4.7	5.7	5.4	8.7	4.7	5.2	6.5	7.5	5.8
Household Population 1990	128,245	73,086	143,743	118,893	60,310	52,945	20,665	30,925	628,812
Percent Age 65+	13.9	10.1	12.3	5.2	9.6	7.6	5.9	6.5	9.9
Percent Age 45-64	24.3	26.1	25.5	20.0	26.7	30.5	27.7	25.1	24.9
Percent Age 35-44	14.5	15.5	15.6	18.4	14.1	13.7	15.5	16.7	15.6
Percent Age 25-34	17.2	15.6	14.8	18.8	16.5	13.9	14.6	14.9	16.2
Percent Age 15-24	12.4	14.8	14.0	15.3	14.1	15.9	16.5	15.3	14.3
Percent Age 5-15	10.2	11.9	11.9	14.7	11.0	11.0	12.0	13.3	12.0
Percent Age 0-4	7.7	6.1	5.9	7.5	7.9	7.5	7.9	8.2	7.1

Note: Totals do not always add to 100% due to rounding.

Source: Montgomery County Planning Board Research Division, 1983.

Total Population

For each of the next three decades, the intermediate population forecast projects a total population increase of approximately 10 percent. This amounts to an average annual increase of 5,800 persons. This average annual increase is close to that of the 1970's, but is less than a third of the 1960's. The County's population is forecast to reach 600,000 by 1985 and 700,000 by the year 2000.

Total population growth will be similar for each of the next three decades. The most dramatic change will occur in age distribution of the County. Demographers group the population into five year age groups. Each age group is represented by a bar. Each bar is then stacked on top of one another to form a pyramid. The post World War II "baby boom" generation has caused and will continue to cause a bulge in this pyramid. Every five years this bulge moves up the pyramid as this population group ages. The baby boom is now out of the school system and are forming families of their own. The young adult population will shrink dramatically as the baby bust generation ages. The children of the baby boom group will begin refilling elementary schools in 1990 back to their 1980 levels. The net effect of this demographic change will be a continued increase in the medium age of the County's population.

Population Change by Age Group

Population Less Than 16 Years Old

The population less than 16 will continue to decline through the mid 1980's and, thereafter, grow because of a birthrate increase trend which began in the late 1970's. The number of births in the 1980's is expected to exceed the number in the 1970's by 10,000. By 1990, the total persons in this age group will be only slightly less than in 1980; this contrasts with the 21 percent decline in this age group between 1970 and 1980. The 1990 makeup of this age group will vary from that in 1980; there will be more children beginning elementary school and fewer of high school age. If ongoing fertility trends continue, this under-16 age group will be larger in the year 2000 than in 1980, but will, nevertheless, be smaller than it was in 1970.

Population 16 to 39

As a whole, this group will remain relatively stable in size from 1980 to 1990. This will be a marked departure from the trend of the last two decades when this age group doubled in size. Declines in the population 16 to 29 will be offset by increases in the population 30 to 39.

Migration into the County because of employment opportunities is expected to cause moderate increases in the 16 to 39 age group by the year 2000.

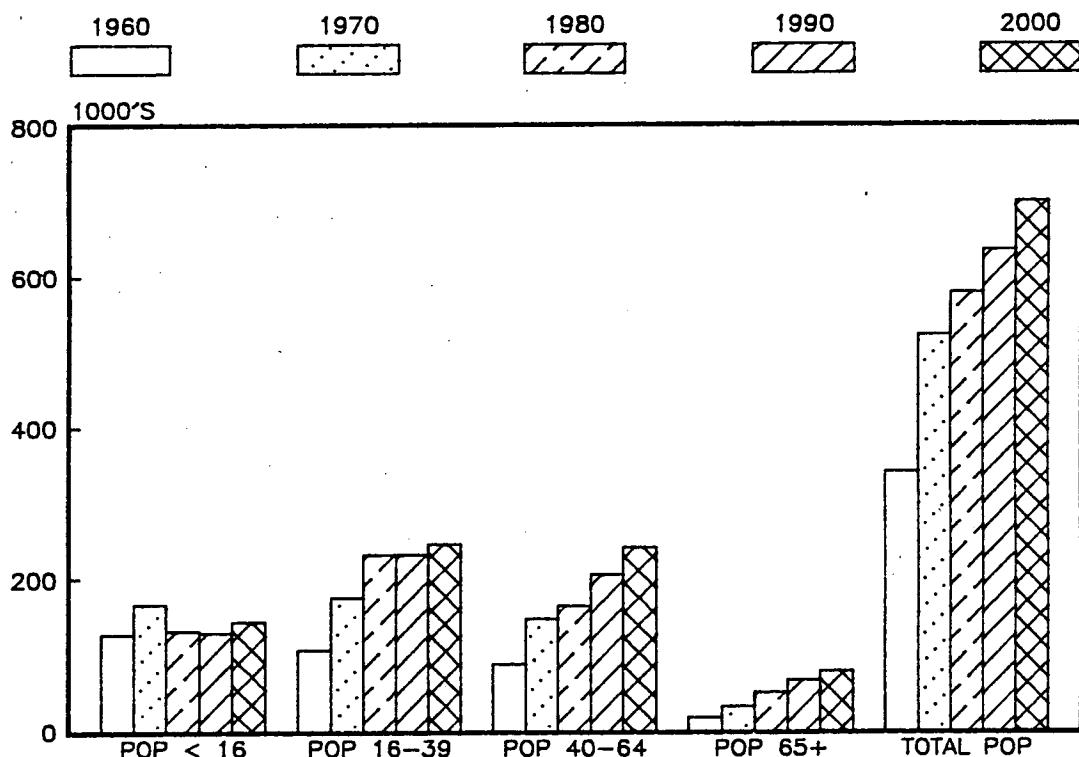
Population 40 to 64

This is expected to be the fastest growing age group through the end of the century. Its growth should have a positive fiscal impact on the County, since incomes are traditionally highest for this age group. They pay more taxes, and their comparative demands for public education are less. In addition, this is traditionally the primary second homebuying age group.

Population 65 and Over

This age group will continue to grow at a relatively constant rate until the mid 1990's. The growth rate will decline as the smaller age cohorts born during the depression reach age 65. Very high rates of growth will be reached after the year 2010 as the baby boom generation reaches age 65.

COMPONENTS OF POPULATION CHANGE MONTGOMERY COUNTY, 1960-2000



1980-2000, RD#3 INTERMEDIATE FORECAST

Employment Forecast

Employment growth in the 1980's will be strong, but will not continue at the extremely rapid pace of the late 1970's. Employment in Montgomery County is forecast to increase by 58,000, or 19 percent, during the 1980's, mostly in the latter half of the decade. Growth of 50,000, or 14 percent, is forecast for the 1990's. These forecasts compare to growth of 120,000, or 66 percent, in the 1970's and 95,000, or 110 percent, in the 1960's. Montgomery's share of regional job growth is 19.4 percent in the 1980's and 17.4 percent in the 1990's.

Montgomery County's employment will continue to be an integral part of the COG region's economy. Despite recent federal employment declines, the region has the lowest unemployment rate among major metropolitan areas in the country, including those located in the sunbelt. Employment in Montgomery County will continue to grow for several reasons.

- 1) The emerging Washington-Baltimore area is becoming one of the most attractive investment markets in the country. Montgomery County's geographical location within the Washington-Baltimore corridor will be an important advantage, compared to counties in Virginia, as this market expands.
- 2) Montgomery County is evolving into a major office center. It also has a solid base in rapidly growing high technology (high-tech) industries, including satellite communications and genetic engineering, which spun off from counterpart high-tech federal agencies in the County. These industries place the County's economy solidly in the mainstream of the new information and gene-splitting ages.
- 3) Montgomery County's high quality housing and cultural environments continue to attract those who make location decisions for their firms. This environment also helps retain the area's large pool of professional and technical workers, many of whom can choose from nationwide and worldwide employment locations.

The Emerging Washington-Baltimore Region

The Washington economic region continues to expand beyond the present COG borders, especially in Maryland. Washington and Baltimore are merging into a single economic region. A recent study by the Fantis Company, one of the world's leading consulting firms in business site location, rated 154 metropolitan areas for investment value growth over the next five to ten years. "Washington and Baltimore rated fifth and 25th, respectively. But, when the regional concept was applied. . . Washington-Baltimore ranked No. 2, behind Dallas-Fort Worth, No. 1."¹

Development in the Washington-Baltimore market, including the US 29 Corridor, is increasing the potential for development in Silver Spring. Two large office buildings, the Wayne Avenue Building in Silver Spring and the C&P Telephone Headquarters in Fairland, have recently been completed. Several others are in the development pipeline and appear to be moving ahead.

¹ Rudolph A. Pyatt, Jr., "D.C., Baltimore Look Good as a Package," The Washington Post, April 22, 1983, p. E1.

The net number of commuters to the Washington region increased more than threefold between 1970 and 1980 to 95,000 persons. Most of this increase was from residents of outlying Maryland counties, e.g., Frederick, Howard, and Anne Arundel Counties. This trend will continue as the Washington-Baltimore economy grows. Most commuters to the region will work in suburban locations. Therefore, job growth will continue to outpace household growth in Montgomery County.

Montgomery County as a Major Employment Center

Montgomery County continues to evolve as a major office center. From 1979 to 1982, 6.9 million square feet of office space were completed in the County. This space will accommodate approximately 34,000 office employees. Although there has been a general overbuilding of office space in the Washington area during the past two years; the newly created space in the County is generally being rapidly absorbed. Office-support employment grew very rapidly during the 1976 to 1980 period as services, which were once concentrated among the office complexes of the District, expanded to the suburbs. Categories of employment which support office work include commerical printing from the manufacturing sector, and stationery and office machine wholesalers, data processing, temporary personnel, protective services, and building maintenance from the service sector. These seven groups grew by 6,700 employees, or 121 percent, between 1976 and 1980 and office growth grew by 3,000, or 42 percent, during this same period.

High Technology in Montgomery County

The high technology character of the federal presence in Montgomery County has given birth and nurture to a large high-tech private sector. Substantial high-tech industrial complexes elsewhere in the nation have typically evolved around premier technical universities such as the Boston complex near Harvard and M.I.T., and Silicon Valley near Stanford. The County's federal high technology agencies and the COG area's universities provide a reservoir of brainpower, a basic resource for high-tech industry. Very importantly, the federal sector provides a source of funding in the form of research grants and contracts for high technology developments.

The huge federal medical complex here (National Institutes of Health, National Library of Medicine, National Naval Medical Center, Walter Reed Army Medical Center Annex and the Uniformed Services University of the Health Sciences gives Montgomery County an advantage in attracting bioengineering firms. Biotech companies such as Genex, Bethesda Research Laboratories (BRL), Litton Bionetics, and Biosci, are the leading high-technology industries already established. The Montgomery County government is currently involved in the creation of a major biotech center off I-270 - the Shady Grove Medical Park.

Much of the remainder of the County's federal employment complex is defense related, high technology employment in such installations as: Naval Ship Research and Development, Naval Surface Weapons Laboratory, Harry Diamond Laboratories, and the Defense Mapping Service. In addition, there are other high technology agencies including: U.S. Bureau of Standards, Nuclear Regulatory Commission, U.S. Department of Energy, and the National Oceanographic and Atmospheric Administration. All of these agencies feed the private sector economy in the region by maintaining jobs for highly educated and paid workers, and by providing grants for organization, and purchasing the products, of private research and development.

TABLE 29
AT-PLACE EMPLOYMENT
INTERMEDIATE FORECAST

Policy Areas and Planning Areas	1980	1985	1990	1995
<u>SILVER SPRING</u>	<u>37,700</u>	<u>39,200</u>	<u>43,600</u>	<u>45,800</u>
36 Silver Spring	33,200	34,700	39,000	40,900
37 Takoma Park	4,500	4,500	4,600	4,900
<u>BETHESDA</u>	<u>74,400</u>	<u>76,400</u>	<u>80,000</u>	<u>82,900</u>
35 Bethesda	74,400	76,400	80,000	82,900
<u>NORTH BETHESDA</u>	<u>73,500</u>	<u>81,500</u>	<u>92,500</u>	<u>101,100</u>
26 Rockville	27,300	31,500	40,200	46,100
30 N. Bethesda	46,200	50,000	52,300	55,000
<u>KENSINGTON-WHEATON</u>	<u>36,600</u>	<u>37,800</u>	<u>39,200</u>	<u>41,600</u>
27 Aspen Hill	10,000	10,000	10,100	10,400
31 Wheaton	22,500	23,700	24,400	25,300
32 Kemp Mill	4,100	4,100	4,700	5,900
<u>I-270 CORRIDOR</u>	<u>42,700</u>	<u>55,000</u>	<u>60,700</u>	<u>67,700</u>
13 Clarksburg	900	1,400	1,700	2,800
19 Germantown	5,600	7,900	9,300	11,900
20/21 Gaithersburg	36,200	45,700	49,700	53,000
<u>COLESVILLE</u>	<u>16,200</u>	<u>19,800</u>	<u>22,100</u>	<u>23,200</u>
28 Cloverly	1,500	1,500	1,500	1,600
33 White Oak	9,300	10,200	10,500	10,900
34 Fairland	5,400	8,100	10,100	10,700
<u>POTOMAC</u>	<u>12,300</u>	<u>12,600</u>	<u>12,800</u>	<u>13,100</u>
24 Darnestown	200	200	200	200
25 Travilah	800	900	900	900
29 Potomac	11,300	11,500	11,700	12,000
<u>OLNEY</u>	<u>4,000</u>	<u>4,000</u>	<u>4,200</u>	<u>4,400</u>
23 Olney	4,000	4,000	4,200	4,400
<u>DAMASCUS</u>	<u>3,200</u>	<u>3,300</u>	<u>3,500</u>	<u>3,700</u>
10 Bennett	500	500	500	600
11 Damascus	1,200	1,300	1,300	1,400
14 Goshen	300	300	300	300
15 Patuxent	700	700	900	900
22 Rock Creek	500	500	500	500
<u>POOLESVILLE</u>	<u>1,400</u>	<u>1,400</u>	<u>1,400</u>	<u>1,500</u>
12 Dickerson	500	500	500	600
16 Martinsburg	200	200	200	200
17 Poolesville	500	500	500	500
18 Lower Seneca	200	200	200	200
TOTAL COUNTY	302,000	331,000	360,000	385,000

V
DEVELOPMENT
PLANS
AND
POLICIES

COMPREHENSIVE
PLANNING
POLICIES

All land use planning in Montgomery County is based upon the County's General Plan. The General Plan "On Wedges and Corridors" was adopted in 1964 and updated in 1969. The General Plan has been refined by the adoption of local area master plans, sector plans, subregional plans and functional master plans. This section of the report provides direct extracts from only the plans which include development staging guidelines. The reader should refer to each master plan since the following extracts do not include maps and charts. The Plan extracts are in alphabetical order.

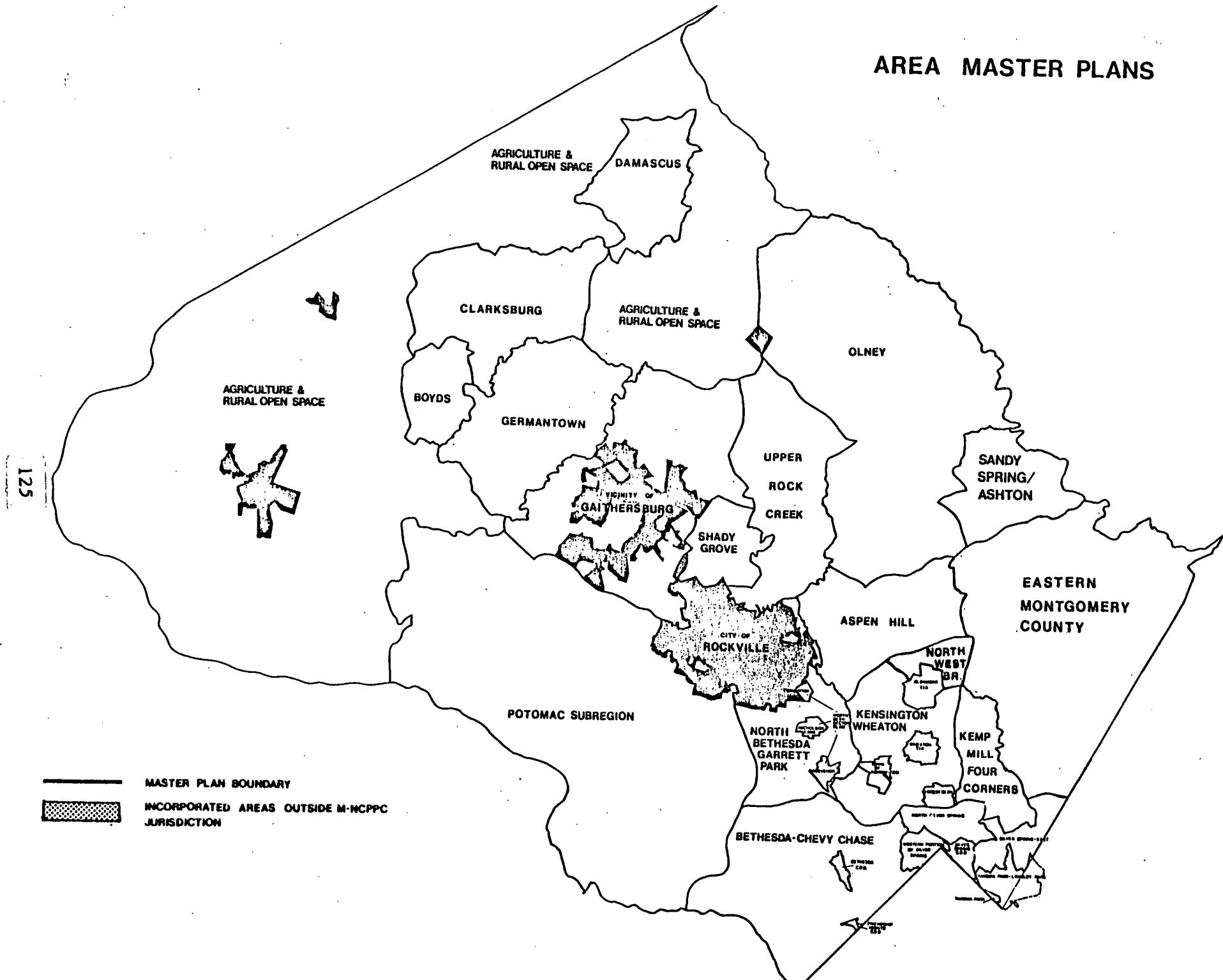
TABLE 30

	Initial Date of Adoption	Date of Last Adopted Amendments	
Master Plans			
Aspen Hill Planning Area	December 1970	October	1979
Bethesda-Chevy Chase Planning Area	October 1970	November	1981
*Boyds	May 1978	November	1982
*Clarksburg and Vicinity	September 1968		
*Damascus	June 1982		
*Eastern Montgomery County	November 1981		
*Gaithersburg & Vicinity	January 1971	July	1982
*Germantown	January 1974	November	1982
Kemp Mill-Four Corners & Vicinity	May 1967		
Kensington/Wheaton	September 1959	July	1982
North Bethesda/Garrett Park Planning Area	December 1970		
*Olney	June 1980		
*Potomac Subregion	May 1980	September	1982
Poolesville Vicinity	September 1980		
*Rock Creek	October 1968	March	1980
*Sandy Spring/Ashton Special Study	November 1980	February	1981
*Silver Spring East	March 1977		
Silver Spring West	April 1972	August	1976
Takoma Park	May 1982		
Upper Northwest Branch	April 1961	November	1981
Upper Rock Creek	November 1967	March	1983
Sector Plans			
*Bethesda CBD	June 1976	November	1982
Capitol View	July 1982		
Forest Glen Transit Impact Area & Vicinity	July 1978		
Friendship Heights CBD	June 1974		
Glenmont Transit Impact Area & Vicinity	July 1978		
Kensington Town & Vicinity	September 1978		
*North Bethesda, Grosvenor, Nicholson Lane	May 1978	February	1981
*Shady Grove Transit Station Area	April 1977		
*Silver Spring	July 1975	June	1978
Silver Spring North	July 1978		
*Takoma Park Transit Impact Area	October 1974		
Westbard	September 1982		
Wheaton CBD & Vicinity	July 1978	July	1982
Functional Plans			
*Agricultural Preservation	October 1980		
Bikeways	June 1978		
Historic Preservation	September 1979		
Highways	June 1955		
Rock Creek Watershed	May 1980		
Seneca Creek and Muddy Branch Watersheds	February 1977		

*Extracts follow.

AREA MASTER PLANS

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AGRICULTURAL PRESERVATION FUNCTIONAL MASTER PLAN

Adopted October 1980
(Starting on Page 59)

WATER AND SEWERAGE GUIDELINES

Water and sewer service are two of the most significant public services that control the timing of development. The recommended guidelines are designed to permit little, if any, additional service within the Study Area with the exception of the growth areas--Damascus, Clarksburg, Olney, and Poolesville. The selective and limited expansion of public water and sewer service will support and help implement the preservation recommendations expressed in this Plan. Service to the Agricultural Preservation Study Area is shown on the Existing Public Resources Maps.

Recommended Water and Sewerage Guidelines

- Consistent with recommendations in the Fifth Annual Growth Policy Report, the entire Study Area (Policy Area I) is not recommended for public sewer service within the next 20 years, with the exception of Clarksburg.
- Deny public water and sewer service to areas designated for agricultural preservation that utilize the Rural Density Transfer Zone (RDT).
- Endorse existing policy to relieve public health problems beyond the sewer envelope by permitting publicly sponsored individual or community system installation under controlled conditions.
- Continue investigation of alternative publicly sponsored individual and community systems for application in areas experiencing community-wide or scattered public health problems beyond the sewer envelope.
- Deny private use of alternative individual and community systems in all areas designated for the Rural Density Transfer Zone (RDT).
- Study the possible application of private alternative individual and community systems in rural open space areas.
- Develop water and sewer policies for the Damascus area that complement its critical location within the Agricultural Reserve as part of the Damascus Master Plan update process.
- Study rural communities and villages for those should be considered for publicly sponsored alternative individual and community systems to help increase the amount of low and moderate cost housing and solve related health problems.
- Support the water and sewer recommendations expressed in the Olney Master Plan and Poolesville Vicinity Master Plan.

Recommended Water Resource Guidelines

Provide solutions to water resource problems in the form of conservation, treatment, and animal waste management measures. In conjunction with the Little Seneca Lake project, a report entitled Seneca Creek Watershed was published by the Montgomery and USDA Soil Conservation Districts, the USDA Forest Service, and the Environmental Division of the MCPB in November, 1979. This is a valuable land management document and should be the prototype for future land management reports for other agricultural areas.

Preserve and improve the water quality and quantity of streams in the Agricultural Preservation Study Area and reduce the harmful effects of flooding, erosion, and sedimentation by requiring that new development within the proposed growth areas of Clarksburg and Damascus be channeled and phased in accord with a comprehensive watershed management program.

BETHESDA CBD SECTOR PLAN

Adopted June 1976

Amended November 1982
(Starting on Page)

STAGING PROCESS

The Stage I area, which includes all properties within the existing CBD-3 Zone, remains unchanged from the 1976 Plan as amended in 1980. (See Figure 5, Staging Plan.) The Stage II area is shown in Figure 5. The general boundaries are Old Georgetown Road (north), Arlington Road and future Woodmont Avenue (west), Hampden Lane, Bethesda Avenue and Willow Lane (south), and 47th Street and Waverly Street (east). Also included in the Stage II area are properties in the northeast portion of the East-West Highway/Wisconsin Avenue intersection. The Stage III area includes all of the CBD-2 area not included within the Stage II area. In the Stage IV area, which includes the CBD-1 area, only optional method applications with 80 percent or more residential floor space are approvable under this Amendment.

Because development capacity is limited, those sites within the Stage II area (see Figure 5, Staging Plan) which are ready will receive an early allocation of trips. The allocation process requires that they move into development within the time limits specified in the zoning ordinance. If properties in the Stage II area do not develop, this Amendment recommends that trip allocations become available to properties in the Stage III area. The same use mix guidelines would apply. The opening of Metro is to be the cut-off point for the Stage II area sites to apply for optional method approval; any remaining unallocated trips could then be granted to properties in either the Stage II or Stage III areas. Projects in the Stage II area containing 25 percent residential floor area and projects in the Stage III area containing 30 percent residential floor area will be given priority for approval in the Stage II time period (before Metro opens). Furthermore, any optional method project containing at least 80 percent of the floor area in residential use may be approved at any time and at any place within the CBD.

This Amendment places a limit on when property owners may apply as described below under Optional Method Administration Procedure. Applications will be processed and optional method approvals shall be granted until the trip allocation for office/retail uses is exhausted. If the total requested trips for office/retail development in the center exceed trip allocations during the first 210 days after adoption of this Amendment, applications will be judged based upon comparative merit as defined by the Standards for Comparison, which appear later in this report.

ALLOCATION PLAN

The Plan Amendment allocates 2,100 trips to specific uses or mixes of uses within the Bethesda CBD Study Area. Any new development committed after January 1, 1982 will be subtracted from the 2,100 trips. The approval of new development shall be limited by the maximum trips allocated, as shown on Table 1. The uses shown on Table 1 are a guide to the use mix which could be approved within the maximum trips allocated.

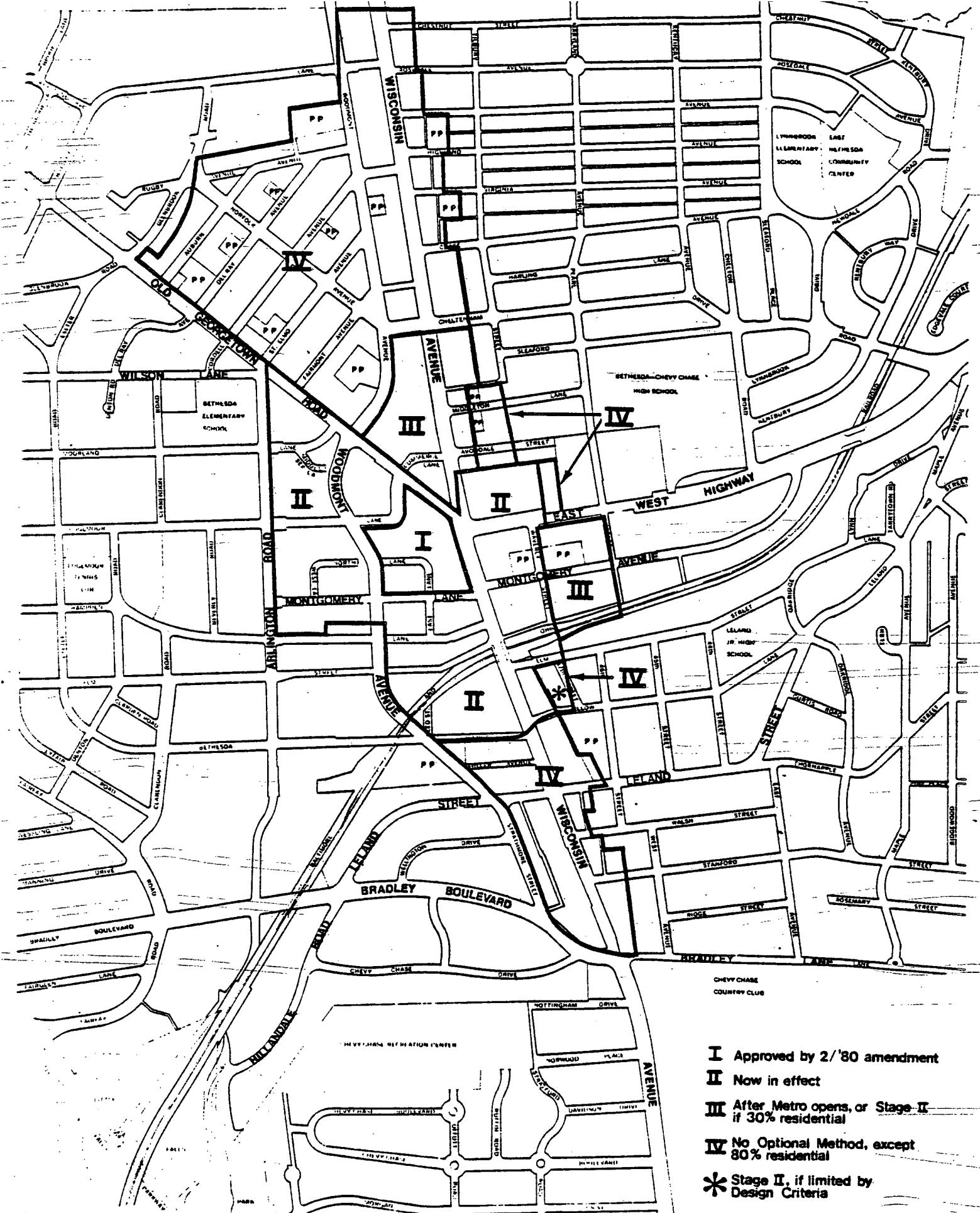
The Plan Amendment recognizes that some development under the standard method will take place in the Bethesda CBD Study Area. Accordingly, 200 trips are set aside for this purpose. Since such development may build by right, use of more than the 200 trips would reduce the trips available for the office/retail development category. (See Table 1.)

A minimum of 225 trips are allocated for residential projects in the Bethesda CBD Study Area. Projects containing 80 percent residential floor area can be approved in any CBD Zone. Residential trips from mixed use projects will be taken from the residential allocation. Additional projects (having at least 80 percent residential floor area) which exceed 225 trips may be approved. Such approvals will reduce the trips available for the office/retail development category.

The office/retail mix of uses, anywhere in the Stage II area, can accommodate 1,675 allocated trips. Projects shall generally conform to the desired use mix (in floor area) of 88 to 100 percent office and up to 12 percent retail. The Planning Board will determine retail floor area on a case-by-case basis. Any property in the Stage III area is eligible for optional method approval in the Stage II time frame, if approximately 30 percent (1.2 FAR) or more of the project is residential. Such projects should generally provide up to 12 percent (0.5 FAR) retail and the balance in office use. A small increase in the office or retail amounts may be approved if residential unit sizes result in more than 45 units per acre.

The suggested use mixes shown on Table 1 and in Appendix C are intended to provide general guidance. The Planning Board may approve variations from these amounts when: (1) proposed uses, especially residential, contribute to the general objective of increasing vitality and after-hours activity in the CBD, and (2) the use mix would not result in substantially greater trip generation than shown for each block in Table C-1...

Applications for optional method development for projects in the Stage II area that contain 25 percent or more of total project floor area in residential use (a minimum of 30 percent is required in the Stage III area) will be given priority and will be exempt from the review period requirements. Such projects will be accepted at any time after Commission adoption of this Plan Amendment, and may be approved by the Board at any time. Furthermore, it is the intent of this Plan Amendment that projects in the TSR area shall be eligible for zoning amendment and site plan approval in the Stage II time period.



I Approved by 2/80 amendment

II Now in effect

III After Metro opens, or Stage II
if 30% residential

IV No Optional Method, except
80% residential

* Stage II, if limited by
Design Criteria

Amendment to the Sector Plan - November, 1982
BETHESDA CBD

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FIGURE 1

STAGING PLAN

TABLE 1
BETHESDA CBD STUDY AREA
ALLOCATION BY USE SHOWING SUGGESTED USE MIX

Development Category	Use Mix	Floor Area Square Feet	Dwelling Units	Trips Allocated
STANDARD METHOD				
Office	(75% est.)	111,276		128
Retail	(25% est.)	<u>37,092</u>		<u>72</u>
Subtotal		148,368		200
RESIDENTIAL¹				
Residential	(80-100%)	1,606,369	1,444	179
Office	(10% est.)	31,415		18
Retail	(10% est.)	<u>35,920</u>		<u>28</u>
Subtotal		1,673,704		225
OFFICE/RETAIL²				
Office	(88% min.)	1,183,936		1,362
Retail	(12% max.)	<u>161,446</u>		<u>313</u>
Subtotal		1,345,382		1,675 ³
SUMMARY OF USES⁴				
Residential		1,606,369	1,444	
Office		1,326,627		
Retail		<u>234,458</u>		
Grand Total		3,167,454		2,100

¹ Floor area calculations reflect site specific use estimates shown on Table C-2, Appendix C.

² Office/retail trips may be allocated for those sites in the Stage III area that provide a minimum of 30 percent residential.

³ Only 1,175 of the 1,675 trips will be authorized absent a personalized ridesharing program. In that case, the Grand Total would be 1,600 trips.

⁴ Building demolitions are likely to result in additional square footage. Trips associated with demolitions will be included in the trip calculations for each site approved.

BOYDS MASTER PLAN
Adopted May 1978
(Starting on Page 37)

SEWERS

The existing sewer situation in Boyds is less than adequate and presents some special problems which must be solved if the town is to continue as a viable community. Although the majority of homes have working septic systems, there are several which totally lack indoor wastewater facilities. There have also been a number of instances when existing systems have failed.

A standard sewer system using large diameter pipe and a gravity flow process involves a substantial cost to provide a wastewater treatment system to a community, especially in a rural area where the houses are not immediately adjacent to one another. This high installation cost usually renders central collection systems in rural areas infeasible.

However, the use of a pressure system which utilizes small diameter plastic pipe provides an excellent alternative solution. Installation of this system involves connecting the existing house wastewater line to a Sewage Grinder Pump (SGP) unit which shreds waste and pumps it through small diameter plastic pipes which replaces a conventional sanitary sewer line. The existing septic tank remains connected and is used as an emergency overflow tank. Using this approach, the staff of the Montgomery County Office of Community Development has developed a possible cost-effective approach to this type of sewer system.

Basic components of the system are the pump-storage-grinder unit consisting of a master pump, grinder, check and relief valves and control tap; a concrete storage tank; plastic effluent pipe; and a failure alarm. The system requires 20 amp, 110 volt electrical service with the piping and pump storage grinder installed below the frost line to prevent freezing.

The collection system consists entirely of small diameter pressure lines which range in diameter from $1\frac{1}{4}$ to 3 inches, combined with storage-grinder-pumps which can be designed to serve single, dual or multiple dwelling units. By locating the storage-grinder unit so that it serves more than one home, the cost per dwelling unit can be reduced.

Treatment is handled by a batch aerobic treatment unit. This treatment unit consists of a single container in which aeration, sedimentation and decanting of treated effluent are accomplished. The operation cycle would include more than 20 hours of aeration, 3 hours of sedimentation and 30 minutes decanting of the effluent, all of which is automatically controlled. The small amount of sludge which accumulates in the tank can be removed by pumping and hauling as necessary to designated WSSC septic tank pumpage acceptance sites. Sludge removal would be necessary perhaps twice annually.

The size of treatment facilities is based upon information regarding waste flows in rural areas. It has been well documented that rural water usage in homes with water consumptive fixtures and appliances is slightly more than 40 gallons/ person/day. Because Boyds will have the advantage of water from the extension of the WSSC system, it has been assumed that water usage may be slightly higher than if it were supplied by wells. For this reason, calculations to determine the feasibility of this system for Boyds used a figure of 50 gal/day/person.

The basic components of the recommended wastewater disposal system are relatively simple. These components would include secondary treatment through the batch-aerobic process followed by land irrigation. Secondary pre-treatment is necessary to comply with Maryland criteria prior to disposal on land. Use of aerobic secondary

processes, is also necessary to enable nitrification to occur in the partially treated wastes. This is beneficial prior to land irrigation to prepare the waste for nitrogen removal by denitrification which occurs in the soil.

The secondary treatment units necessary for this alternative are readily available manufactured units which require no special fabrication or components. The secondary treatment unit can be placed in the ground and the entire system blended into the natural environmental setting.

Overall, this system represents a feasible and innovative approach to rural communities having problematic soil conditions and a small volume domestic wastewater flow.

This system is competitive with and less costly than a WSSC extension while accomplishing the objectives that are of vital importance to the future of this and other rural communities. Important aspects of this system which are critical to both the system and the plan are:

- Providing a disposal system that has a limited capacity for future growth, thus protecting the character of the community by maintaining its low density and following the goals established by the Rural Zone and the General Plan for rural areas.
- The establishment of a sewerage system will provide the town with the growth potential necessary to sustain the needs of its growing population and provide support for its existing and proposed community facilities.

STAGING

In order to address the most severe sewage needs in Boyds first and to ensure that the implementation of the recommended system is not undertaken without sufficient community support, the proposed service area is divided into two stages. Since the problems are generally more severe south of Route 117, it is anticipated that this section will be constructed first with the northern portion of the planning area to be served at a later date. The full-size treatment facility and disposal site will be developed along with the stage 1 collection system. Thus when stage 2 is ready for inclusion in the sewerage system, all that will be required is the installation of the collection system and the connection to the 3" pressure sewerline at the northern point of White Grounds Road.

Implementation of this recommendation shall proceed only after 60 percent of the existing users within either stage 1 or stage 2 demonstrate their willingness to connect to this system by filing a petition with the Montgomery County Office of Environmental Planning and/or the County determines that a public system is required to safeguard the public's health.

In the event that no petition is filed prior to the adoption of the FY-1981 Ten-Year Water Supply and Sewerage Systems Plan, the Planning Board will reconsider all master plan elements which are contingent on the construction of the public water and sewer system.

CLARKSBURG MASTER PLAN

Adopted September 1968
(Starting on Page 16)

INFLUENCES ON FUTURE GROWTH

...

Another problem is the absence of public services, due to the small current population. The use of wells and septic tanks is becoming increasingly unsatisfactory as population density increases, because the area's rocky geologic structure and impermeable soil encourage the mixture of septic tank effluent with well water and could, eventually, create a major health problem. Lack of sewers acts as a deterrent to economic growth and restricts choice in site selection for development. Public services are needed to improve rural roads, and Interstate 70-S is already overcrowded in peak hours as far north as Germantown. Secondary schools, playfields, a library, a health center, and police and fire facilities are absent.

...

(Page 22)

IMPLEMENTATION OF THE PLAN

Putting the Plan for Clarksburg into effect will involve a number of different public programs. The most important of these will be the administration of the Zoning Ordinance and Subdivision Regulations and the construction of roads, sewerage and water supply systems, and other public works.

Staging

The Zoning Ordinance will be a principal control over private land development in the Planning Area. A process of rezoning must inevitably take place in Clarksburg, as it must in all areas undergoing rural-urban change. A method or system for orderly zoning change must be evolved. This could consist of an explicit series of criteria for rezoning to any of the districts in the Zoning Ordinance. These criteria would be concerned with such factors as the capacities of existing and programmed sewerage, water supply, and road systems, schools, and other public services, in consideration of soil conditions and capabilities and compatibility of the proposed development with its surroundings. These criteria should be developed on the basis of experience with traffic-generating characteristics of development in zoning districts, with projected water use and sewage discharge by different types of development, with soil conservation practices, and with other relevant factors. They should be explicit in order to guide the Planning Board and the County Council in rezoning decisions and to provide prospective developers with a correspondingly explicit statement of the County's policy on land development. Although much of the knowledge needed for deriving such criteria now exists, it has not yet been organized in usable form; this should be a continuing subject of research by the Commission staff.

DAMASCUS MASTER PLAN
Adopted June 1982
(Starting on Page 44)

PROPOSED IMMEDIATE ROAD IMPROVEMENTS: DAMASCUS BUSINESS DISTRICT

- a. Extend the eastbound through lane, in front of the bank, back around the curve on Route 27 southward to Damascus Boulevard. This improvement will make both eastbound lanes accessible during the P.M. peak hour. Right lane is now intermittently blocked by standing vehicles.
- b. Extend the southbound right turn lane on Route 27 from the fire house northward to a point opposite the old Woodfield-Ford garage. This improvement will permit operation described in e. and f. below.
- c. Construct a 24 foot 2-lane open section road from the existing entrance to Damascus Center at Route 27 westward to intersect radially with the existing curved paving on Lewis Drive (this road is referred to as Ridge Road-Lewis Drive connector). This improvement will provide an alternate route through the business area.
- d. Re-stripe and install appropriate signs to create two eastbound lanes on Main Street at Ridge Road with left turn mandatory from the left lane and optional from the right lane. This will reduce the time required for eastbound traffic to clear the intersection during its green cycle.
- e. Re-stripe Ridge Road north of Main Street to create two northbound lanes and one southbound lane as far as the entrance to the shopping center.
- f. North of the above intersection merge the two northbound lanes into one. Additional capacity is not recommended beyond this point. Capacity will be provided to the east by A-12.
- g. Beginning opposite the furniture store (former Woodfield garage) on the west side of Ridge Road, stripe the paving so as to provide a southbound free right lane and a central through-left turn lane approaching the intersection of Ridge Road-Lewis Drive connector.

This new intersection should be clearly marked so as to direct southbound Route 27 traffic to turn right at this point and proceed via Lewis Drive rather than turning right at Main Street. (Operation should be observed to determine need for a future signal). Right and left turns would still be allowed at Main Street to serve local needs.

- h. Extend the widening of Main Street adjoining the entrance to the Damascus Center westward to meet the very short right turn lane now existing just east of the intersection at Ridge Road.

Improvements "a" through "h" are recommended to be included in the state's "Special Projects" program.

- i. To improve safety, parking on the south side of Main Street east of the intersection with Ridge Road should be removed to an off-street location or, at least, converted from a diagonal to parallel pattern.

The items described under "Proposed Immediate Road Improvement: Damascus Business District" represent the first stage of a public improvement package which this Plan proposes in order to provide capacity to handle anticipated traffic increases in the near future. The entire improvements package is described in Proposed Business Area Roadway Improvement Map. This Plan recommends that these improvements be included in the State Highway Administration's "Special Projects" programs as quickly as possible. These improvements are calculated to raise the level of service from "E" to "A" at the intersection of Routes 108 and 27 during P.M. rush hour.

To accommodate the additional traffic that is expected along Woodfield Road (Md. 124) in future years, particularly when the Shady Grove Metro station opens, Woodfield Road should be extended north of Route 108 to Ridge Road. This link, coupled with improvements to the Ridge Road - Route 108 intersection, would distribute through traffic over several roads and would greatly reduce rush-hour congestion. This Plan recommends that Woodfield Road intersect Ridge Road south of Faith Lane and that Faith Lane be relocated to intersect with Woodfield Road extended rather than Ridge Road. Further capacity, if needed, could be attained by adding another lane to Woodfield Road between A-11A and Main Street.

As noted, the State Highway 20-Year Needs Inventory recommends reconstruction (widening) of Route 27 to relieve future congestion. This Plan has explored the possibility of constructing a parallel road west of Md. 27 (between Gue Road and Md. 80) to provide additional capacity. The cost of acquiring a right-of-way and building 9000 linear feet of roadway is estimated to be \$2.8 million. The estimated cost of adding one or two lanes to Route 27 ranges from \$450,000 to \$780,000. This Plan therefore endorses the idea of reconstructing Route 27 within the present right-of-way north of Faith Lane rather than building a new road paralleling Route 27.

Arterial roadways usually are obtained by dedication during the subdivision process and are usually constructed with private funds. Driveway access to arterial roads can be controlled in accord with subdivision regulations, thereby assuring high capacity and smooth traffic movement.

Primary roadways provide internal circulation within a subdivision or neighborhood. Although the Transportation Plan shows proposed locations for primaries, the final location is determined at time of subdivision. Primary roads may also be deleted or added at time of subdivision.

1	Construct 2-lanes @ \$225.00/ft.	=	\$2,300,000
	+ 20% engineering costs	=	\$ 500,000
	R-O-W @ \$500/acre	=	\$ 80,000
			\$2,880,000

IMPLEMENTING PROPOSED TRANSPORTATION IMPROVEMENTS

Table 5, Staging of Road Improvements in Damascus, places a priority on road improvements and identifies how they would be implemented.

PUBLIC TRANSIT

The Damascus area is not currently served by public transportation. Current planning and financial studies being conducted by the Washington Metropolitan Area Transit Authority, with input by Montgomery County, include a proposal to extend Metrobus service to Damascus. The proposal is being made for purposes of analysis as part of a 10 year projection of budget impacts of Metro transit services. The results of the study, which are not yet available, will indicate the patronage demand and costs associated with the proposal. The proposal specifies 30 minute peak-only headway between Damascus and the Shady Grove Metrorail Station. Service of that nature would most likely be implemented, if warranted, some time at or soon after the opening of the Shady Grove Line late in 1983.

Informal commuter parking for 30 cars is occurring every business day near the church north of the intersection of Md. 80 and Md. 27 at Claggettsville. If public funds become available for commuter parking in Damascus, sites north of the business area should be considered to reduce congestion at Ridge Road and Route 108. One possibility which should be explored is leasing a church parking lot during weekdays.

Sewer Service Areas

Densities proposed in the Magruder Valley will be served by existing community sewer and water systems. The major implementation issues regarding public sewer are:

- How should existing treatment capacity be allocated to implement land use proposals in this Plan. Should the present sewage treatment allocation system for Damascus be abandoned?
- What are the alternatives for providing additional sewage treatment capacity?

Although community sewerage facilities in the Damascus area are owned and operated by the WSSC, the Damascus system has its own sewage treatment plant which is completely separate from other WSSC sewerage facilities in Montgomery County. Most of the existing service area (see map, page 103) lies within the Magruder Valley between Routes 27 and 124. There are two pumping stations serving areas outside of the Magruder Valley, one for the Damascus Shopping Center and one for Spring Garden Estates (known as pump station "D"). The major interceptor follows Magruder Branch from its headwaters near Route 108 south through Damascus Regional Park to a pumping station located near Welsh Road. The sewage is then pumped a short distance to the sewage treatment plant which is located in the park.

The Damascus Sewage Treatment Plant was built in the early 1970's and upgraded in 1978 from secondary to advanced wastewater treatment. It has a design capacity of 750,000 gallons per day. The average monthly flow for 1980 was only 123,000 gallons per day.

TABLE 5
STAGING OF ROAD IMPROVEMENTS IN DAMASCUS

Item	Cost (1981 Dollars)	Effect	Implementation
1. a. Complete westbound lane on north side of Main Street	\$ 60,000	Critical lane volume reduced at Main St. and Ridge Rd. from 1476 to 1110.	State Highway Administration "Special Projects" program.
b. Eastbound lane on south side of Main St. approaching Ridge Road	<u>\$ 50,000</u> \$ 110,000 total	(Level of service E to B)	
2. a. Construct Ridge-Lewis connector	\$ 150,000	Critical lane volume reduced at Main and Ridge from 1110 to 927.	Montgomery County or State Highway Administration.
b. Complete paving and re-stripe Ridge Rd. from Main St. north to connector	<u>\$ 40,000</u> \$ 190,000 total	(Level of Service B to A)	
3. Extend Woodfield Rd. north of Main St. to Ridge Rd.		Will divert 310 Westbound and 113 Eastbound vehicles per hour from Main St. and from Ridge Rd. north of Main St. to limit of extension. <u>Note:</u> As traffic on Woodfield Rd. and Rte. 108 grows, these figures will increase.	Montgomery County and private developers.
4. Widen Md. 27 north of A-12 to Claggettsville (adds two lanes).	\$ 1,300,000 total \$ 780,000	Would carry future increased traffic.	State Highway Administration.
5. Extend Bethesda Church Rd. to Woodfield Rd.		Would serve new development. Could divert maximum of 50 eastbound and 50 westbound vehicles from Main St. during the P.M. peak hour. Probably fewer diversions if items 1 and 2 have been completed.	Private developers.
6. Hold A-11-A right-of-way (M-27 on 1966 Plan) for future use in connection with the extension of Woodfield Road north of Main Street.	\$ 500,000	Could divert northbound through traffic from intersection of Main St. and Ridge Rd. to Woodfield Rd.	State Highway Administration.

Allocation Policy

Capacity in the Damascus Sewage Treatment Plant is allocated under a policy established by the County's FY 1978-1987 Comprehensive Water Supply and Sewerage Systems Plan. The Executive's proposed FYs 1981-1990 plan update has recommended the transfer of some commercial allocation to residential and the use of more recent unit flow factors. The allocations which would result from the policy as amended are given in Table 8.

This table shows that nearly all of the allocation for new residential development has been committed. This is significant, given the fact that actual flows at the treatment plant are only 16 percent of the design capacity. Even based on the current Planning Board high growth forecast, the existing treatment capacity should be adequate to support the population expected in the year 2000. The allocation policy does provide for the "recapture" of commitments in cases where units have not proceeded to construction within one year (the County is considering a change to 18 months). It appears that a number of commitments could be recaptured on this basis if a "waiting list" for sewer ever occurred.

Several recommendations of the Plan may increase the "waiting list" for sewer:

1. The Plan recommends 345 acres of the land that flows by gravity to Pump Station "D" be zoned for one house per 2 acres. Sewer service should be provided to encourage clustering away from Little Bennett Creek.
2. Two areas proposed as TDR receiving areas are recommended for a base density of one house per 2 acres. No public sewer is proposed at this base density. By participating in the TDR program, developers would be eligible for a density increase to 2 houses per acre (half-acre lots) and public sewer.
3. Approximately 213 acres south of Damascus Regional Park are proposed as a TDR receiving area. The base density proposed is one house per 2 acres without public water or public sewer. To encourage the transfer of development rights, a TDR density of 1 house per 1 acre with public water is proposed. Sewer service is not recommended.

Estimates are shown in Table 9 of the amount of treatment capacity needed for each proposal.

This Plan proposes that development in the vicinity of Pump Station "D" and the two proposed TDR receiving areas be eligible for public sewer in accord with County allocation and recapture policies. Sewer service for the Business Area Expansion east of Damascus Shopping Center should only be programmed if this site is selected as the preferred location for a new shopping center.

Whether this present allocation policy should be retained or abandoned will be explored with County staff as part of Plan Implementation.

TABLE 8
DAMASCUS SERVICE AREA ALLOCATION SUMMARY

Category	Sub-Total	Flow (gpd)* Total
1a. Health Problem Areas Due to Failing Septic Systems		21,000
1b. Potential Future Health Problem Areas		66,850
2. Public Facilities		
Public Schools		
(a) Damascus Elementary	4,428	
(b) Baker Junior High	4,088	
(c) Damascus High	7,920	
(d) Woodfield	2,064	
Library Facilities	500	
Fire Facilities	500	
Subtotal		19,500
3a. Existing Commercial Area	33,300	33,300
3b. Future Commercial		
Currently Allocated**	3,272	
Currently Unallocated**	26,128	
Subtotal		29,400
4. Residential Development		
Currently Allocated (including existing hookups)**	553,370	
Currently Unallocated**	26,580	
Subtotal		<u>579,950</u>
TOTAL		750,000

* gpd = gallons per day

** As of September 9, 1981

Source: Proposed FY's 1981-1990 Comprehensive Water Supply and Sewerage Systems Plan; Washington Suburban Sanitary Commission.

TABLE 9
**PROPOSED ADDITIONS TO
EXISTING SEWER SERVICE AREA**

Area	Acres	Potential No. of Houses	Estimated Daily Sewage Flows (Houses x 350 Gals.)	Comments
Pump Station "D"	283	At 1 per 2 acres: 141 plus 97 potential homes on existing lots. 141 + 97 = 238	83,300	With minor modification, Pump Station "D" appears adequate to accom- modate these sewage flows.
Ridge Road TDR Receiving Area A	91	At 2 per acre (TDR density): 182	63,700	
		At 1 per 2 acres (without TDR): 45	15,750	
Woodfield Road TDR Receiving Area B	126	At 2 per acre (TDR density): 252	88,200	
		At 1 per 2 acres (without TDR): 63	22,050	

Providing Additional Treatment Capacity

The possibility of obtaining additional sewage treatment capacity is uncertain at this time. Any expansion of the existing treatment plant is dependent upon the assimilative capacity of Magruder Branch and would be expensive due to the level of treatment required. Other alternatives include land treatment or small, package treatment plants. Eventually, it is anticipated that an interceptor will be extended up the Little Seneca Creek from the main WSSC system serving the developed areas of Montgomery County. It would then be possible to pump Damascus flows over to this line and phase out the Damascus treatment plant if desired. This extension is not expected to occur, however, until Clarksburg develops, which is not forecast for another 15 or 20 years.

The issue of additonal treatment capacity will be addressed in a WSSC Damascus sewerage facility plan which has been included in the County's proposed FYs 1982-1987 Capital Improvements Program. This facility plan will consider the sewerage needs of master plan land use alternatives. At this point, Planning Board staff question the need to pursue new treatment capacity solely for the purpose of providing additional commitments, considering that the existing treatment plant should be adequate to handle actual flows through the year 2000.

The Land Use Plan does recommend an area east of Damascus Shopping Center for a Planned Development at 5 units per acre. However, until additional sewer capacity is available, this land should remain RE-2C (one house per 2 acres) without sewer service.

Planned Facilities

The only new sewerage facilities planned for the Damascus area at this time are an expansion of the pumping station serving the shopping center (Project S-94.03) and the installation of individual grinder pump systems on Locust Drive and Lewis Drive. The shopping center pumping station (known as B⁶) is being upgraded to serve the health problems in the nearby Beall Avenue area. It will serve 57 existing and 12 future residences, plus the existing shopping center.

The grinder pumps will be installed at 25 houses on Lewis Drive and 11 houses on Locust Drive. Sewage from each house will be ground up and pumped through a small diameter plastic pipe to the ridge line where it will connect to the existing sewerage system. A conventional pump station had previously been planned for this area but it was determined that the grinder pumps would be a more cost-effective approach for serving this health problem area.

EASTERN MONTGOMERY COUNTY MASTER PLAN

Adopted November 1981
(Starting on Page 219)

TABLE 15
PROPOSED WATER PROJECTS

Project Number	Project Name	Estimated Remaining Project Cost (\$000)	Project Description
W-113.05, W-113.07 & W-113.08	Colesville Water Line	468	4,100 feet of 30 inch water main southeast of Good Hope Road.
W-80.08	Potomac Supply to Prince George's County	2,676	12,450 feet of 120 inch water main.

Source: FY 83-88 CIP

As shown on Figure 48, much of eastern Montgomery County has existing sewer service. The Ten-Year Plan proposes that nearly all of the planning area be served within the ten year period except for the following areas:

- the Patuxent River watershed;
- an area north of Greencastle Road and east of Route 29; and
- an area north of Norwood Road and west of New Hampshire Avenue.

The Ten-Year Plan included two proposed relief sewers and one new major sewer in the Anacostia basin. These projects are shown on Figure 8, and described in Table 16. The Northwest Branch relief sewer was developed on the basis of earlier population forecasts. Neither the county nor the region have grown as fast as expected and indications are that growth will continue to be slower than previously projected. The Sewer Evaluation System model (SES), a computer model which evaluates sewer system capabilities, indicates adequate transmission capacity for the Northwest Branch sewer until the year 2000. The CIP identifies Project S-91.02, Northwest Branch Sewer Facility Plan, to examine future needs in the sub-basin and determine whether construction of the project is necessary.

The second proposed relief project is the Paint Branch relief sewer. The Maryland Department of Natural Resources has delayed this project until the Eastern Montgomery County Master Plan is completed. A portion of this relief sewer has been placed on the "dependent project" list in the CIP. This means that it will not be built until there is further indication that the project is needed. Construction of a sewer line in Paint Branch could endanger the trout fishery. The CIP contains funds for Project S-33.05, Paint Branch Sewerage Facility Plan, to analyze replacement sewer, relief sewer, or pumping station needs. The Project also will address environmental effects of construction of a sewer line in Paint Branch.

The proposed new University of Maryland Plant Research Farm interceptor, Project S-33.02, will be built to serve the major employment center to be constructed on that 330-acre site.

Figure 49 illustrates the priorities of this master plan for the future provision of water and sewer service. In general, the priorities shown on Figure 49 correspond with the water and sewer service categories in the Ten-Year Plan. Priority one would be equivalent to categories W-3, W-4, S-3, and S-4; priority two to W-5 and S-5; and priority three to W-6 and S-6 (no planned service). The timing, however, will depend upon future highway improvements discussed below in the Transportation section. In areas with little remaining highway capacity, changes to the existing sewer service categories generally will not be approved until additional highways are programmed in the CIP. The link between sewers and roads is intended to keep new development -- and its impact on public facilities -- in scale with the capacity of the facilities to serve the development. Once the highways are programmed, water and sewer service can be provided in accord with the priorities shown on Figure 49.

TABLE 16
PROPOSED SEWER PROJECTS

Project Number	Project Name	Estimated Remaining Project Cost (\$000)	Length and Diameter of Lines	Capacity mgd*
S-33.02	University of Maryland Research Farm Sewer	216	2,000 ft. of 27 in. 4,200 ft. of 18 in. 2,100 ft. of 15 in.	5.6
S-33.03	Paint Branch Relief Sewer (dependent project)	--	1,720 ft. of 27 in. 7,100 ft. of 24 in. 2,855 ft. of 21 in.	17.8
S-33.05	Paint Branch Sewerage Facility Plan	75	--	--
S-91.02	Northwest Branch Sewer Facility Plan	--	--	--

* mgd = million gallons per day.

Source: Montgomery County FY 83-88 CIP.

The 1980 Comprehensive Staging Plan identified the Cloverly sub-area as one with very little remaining highway capacity. Water and sewer category change requests in this area in particular, therefore, will likely be denied, and service subsequently delayed, until the necessary highway improvements are made.

Sewer service also may be used as an incentive to encourage use of transferable development rights (TDR's). The area north of Greencastle Road, east of Route 29, shown as a TDR receiving area on Figure 31, should be changed to sewer category S-3 (priority 1 on Figure 49) in the event that development using TDR's is utilized. Such a category change would be considered simultaneously with the consideration of the development plan.

Land that is designated in an adopted master plan for automatic provision of sewer and water service upon assembly of transferable development rights shall be automatically changed from category S-4, S-5, or S-6 to category S-3 upon approval by the Planning Board of a preliminary plan of subdivision. The subject development must have passed the Adequate Public Facilities test and secured at least the minimum number of TDR's permitted to be used under the master plan designation.

TRANSPORTATION

The Comprehensive Planning Policies report recommends a "Stage One" limitation in 1982 of 1,351 net new dwelling units and 6,692 net new employees in the Fairland/White Oak and Cloverly "traffic sheds."⁶ Increases to these limitations would be contingent on planned highway improvements to Sandy Spring Road and Randolph Road east of Route 29 being at least 50 percent programmed for construction. Further development could be accommodated at a later time if the transportation improvements recommended by this master plan are programmed. Such improvements could include express bus service or transit service on exclusive or reserved lanes, as well as highway improvements recommended in this master plan.

Given the forecasted pace of growth for the area, the road improvements recommended in this master plan should be staged as follows:

- Phase I, to 1990:
 - Route 29, Stewart Lane to Briggs Chaney Road: 6 lanes, divided.
 - New Hampshire Avenue, East Randolph Road to the proposed Intercounty Connector: 6 lanes, divided. If the Intercounty Connector is built, otherwise, 4 lanes, divided.
 - Bonifant Road, Northwest Branch to New Hampshire Avenue including relocation to connect to relocated Good Hope Road: 2 lanes.
 - Briggs Chaney Road, Route 29 to Intercounty Connector: 4 lanes.
 - Briggs Chaney Road, remainder: eliminate "dog-legs" at New Hampshire Avenue and Old Columbia Pike, spot safety improvement elsewhere.
 - East Randolph Road relocated, Route 29 to Prince George's County Line: 4 lanes.
 - Good Hope Road, New Hampshire Avenue to west of Blanton Road including relocation at New Hampshire Avenue: 2 lanes.
 - Lockwood Drive, reconstruct intersection at New Hampshire Avenue.
 - Randolph Road, reconstruct and resignalize intersection at New Hampshire Avenue.
 - Sandy Spring Road, Route 29 to Prince George's County Line: 4 lanes divided.

⁶

Op. Cit., p. 87, pp. 52-53, and for the Patuxent watershed, staff estimates.

- Fringe Parking Lots, construct White Oak lot, including access road, acquire land for Colesville (if needed), Fairland Road, and Burtonsville lots.

- Phase II, 1990-1995:

- Route 29, Briggs Chaney Road to Spencerville Road: 6 lanes, divided.
- New Hampshire Avenue, Intercounty Connector to Spencerville Road: 4 lanes.
- The Intercounty Connector, in whatever form it is ultimately approved, should be built in this phase.
- East Randolph Road, New Hampshire Avenue to Route 29: 4 lanes, divided.
- Fairland Road, Randolph Road to Route 29: 2 lanes.
- Lockwood Drive, Route 29 to New Hampshire Avenue: 4 lanes.
- Old Columbia Pike, Route 29 to Intercounty Connector: 2 lanes.
- Old Columbia Pike, Industrial Parkway to Stewart Lane: 2 lanes.
- Fringe Parking Lots, construct Colesville (if needed), Fairland Road, and Burtonsville lots.

- Phase III, beyond 1995:

- Route 29, Spencerville Road to the Howard County Line: 6 lanes divided.
- Decision on the Route 29 relocation and interchange at Burtonsville should be made.
- New Hampshire Avenue, north of Spencerville Road: 2 lanes.
- Briggs Chaney Road, entire length (except portion rebuilt in Phase I): 2 lanes.
- Fairland Road, Route 29 to Prince George's County Line: 2 lanes.
- Old Columbia Pike, Intercounty Connector to Spencerville Road: 2 lanes.
- Spencerville Road, through Burtonsville business district: 6 lanes, divided.

GAITHERSBURG & VICINITY MASTER PLAN

Adopted January 1971

Amended July 1982 (General Staging Element not effected)
(Starting on Page 41)

IMPLEMENTATION

STAGING

New residential growth in the Gaithersburg vicinity has been triggered by the establishment of several large employment centers along Interstate I-70S during the last decade. Other recent growth is due to the improvement of commuter trips to employment centers in the down-County and other areas in the metropolitan region since the completion of I-70S.

Some of this growth has occurred contiguous to the older development in the center of the City. Until sewers were installed in recent years in the Seneca Creek Basin, most development was confined to the Rock Creek Basin, plus the several small areas served by pumping stations to the west and south of the old town. With sewers now installed in Whetstone Branch, Great Seneca Creek, and a portion of Long Draught Branch, other development can now locate some distance away, in what are still rural surroundings. Therefore, it is no longer reasonable to expect development to expand outward in concentric rings from the old town center; rather, the response of development will be to the addition of new employment centers, the construction of additional highways, and the relative pricing of new housing, as compared with the cost and convenience of commuting to job locations elsewhere.

Public policies and actions have been highly favorable toward the encouragement of development in the corridor cities. Because of the open character of the area, it is possible to acquire highway and utility rights-of-way and sites for public facilities, with relative ease and minimum costs as compared with the more developed sections of the County. The County's program for the Medical Center calls for increased amounts of private housing in that area. The decision to forego any expansion of the Airport assures nearby areas that heavy or jet aircraft will no longer be a threat to the environment in that vicinity and that additional amounts of low-density development will be possible. Clearly, the interest of balanced growth calls for continued public policy favoring continued development in this corridor city.

It is the general policy of the County to rezone for higher intensities only when adequate transportation and other public facilities are completed or are firmly scheduled for adequacy status by the time the proposed development on new zoning will occur. Particular care should be exercised to assure that the timing of high-density development in the area surrounding the proposed interchange of the Outer Beltway with I-70S is co-ordinated with the timing of construction of the Outer Beltway.

GERMANTOWN

Adopted January 1974

Amended September 1979

Non-staging Amendment December 1982
(Starting on Page 67)

STAGE ONE

This development stage can be rather precisely delineated. It pertains to existing dwellings and/or other structures which are expected to remain and to those areas which have outstanding authorizations for sewer. Those areas have a potential for 5,700 units (see Exhibit 20).

STAGE TWO

This stage will commence, regardless of the state of development in Stage One, when additional sewer treatment capacity becomes available.

The sewer service program, therefore, should be extended as recommended in this Amendment (see Section 4.53 and Exhibit 24). This will require amendment of the Comprehensive 10-Year Water and Sewerage Plan to permit a more detailed program of service extension to areas smaller than an entire drainage basin. Limited-access sewers will also be required in some areas to avoid opening more land to development than called for in the periodically revised development program for Germantown.

Based on expected rates of development this Master Plan Amendment recommends that the second stage of private development should permit a maximum of 11,500 additional dwelling units. This figure may be revised, based on development experience, market forecasts, and capital improvements scheduled by the time development begins in this stage. Assuming that Stages One and Two, together, will extend for about the first ten years of development, this will allow "room" for more than twice as much population as is predicted for Germantown in this period. This wide margin is recommended to allow for competition and in recognition that, for a variety of reasons, not all owners will be ready or able to develop within that time frame. Development in this stage can commence only when major additions to sewer treatment capacity are made. This area should be included in the comprehensive sectional map amendment enacted immediately following the adoption of this Comprehensive Amendment to the Master Plan for Germantown, however, to allow preliminary development approvals, such as applications for rezoning to the Planned Development Zone and for preliminary subdivision approval, to proceed.

The Stage Two development envelope should be extended to allow development to continue apace, primarily in the Churchill, Gunners Lake, and Middlebrook Villages. This land, as delineated on Exhibit 20, is currently held in 46 separate ownerships. All the areas in Stage Two are close to I-70-S and other existing improvements; are in proximity to the town center; and, importantly, are all located upstream from proposed storm-water management facilities indicated in the Seneca Creek Watershed Study or from facilities to be provided by the County or the developers, in accordance with the standards developed through the ongoing Countywide storm-water study. Also, these areas do not require major sewer trunk line extensions in excess of any required for the Montgomery College campus.

Programming for public facilities, therefore, should initially be concentrated in these three villages and in the sequence described in this Amendment. These facilities include the Germantown campus of Montgomery College, proposed for Middlebrook Village. Each neighborhood developed should be served by an elementary school.

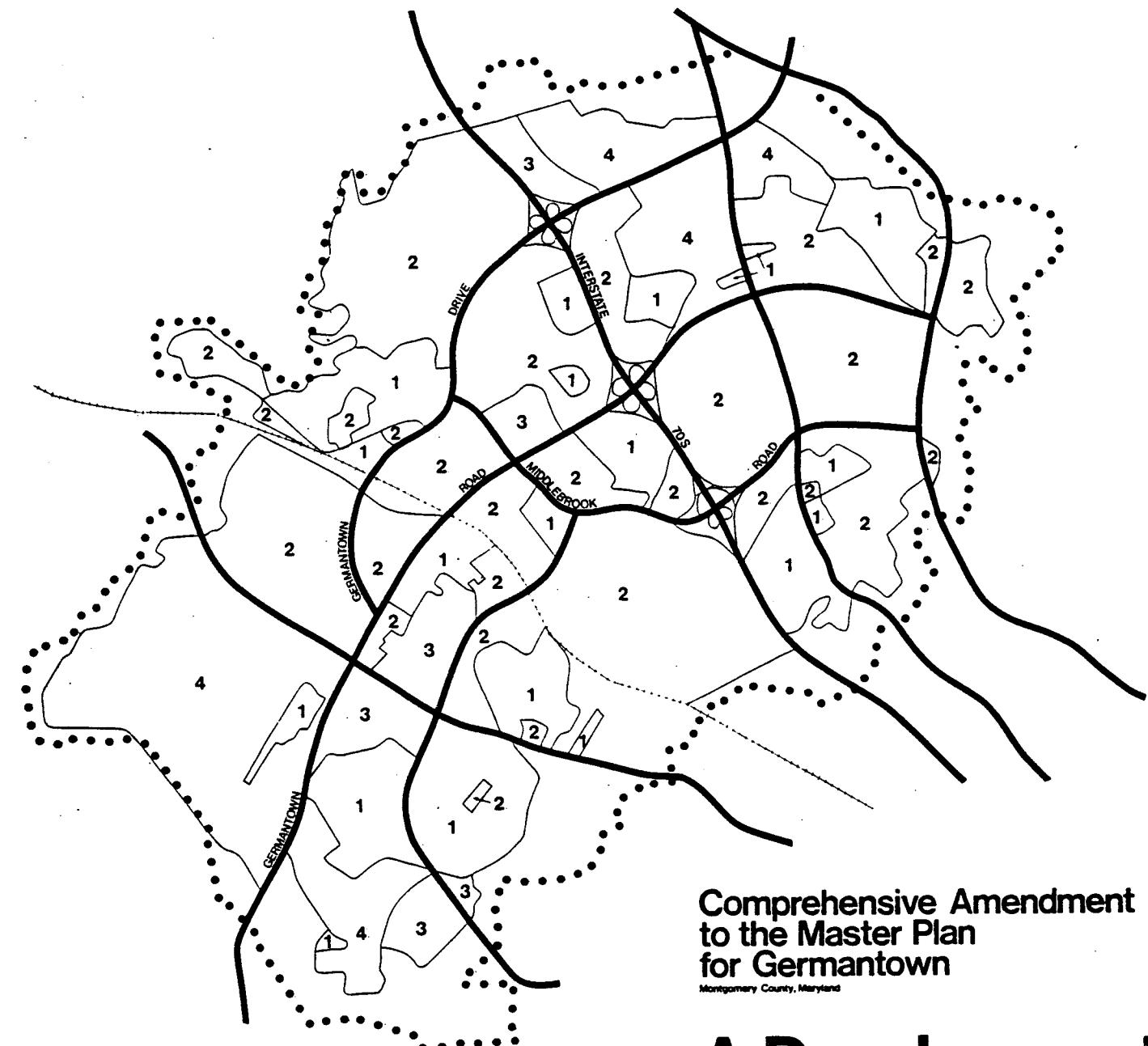
Every effort should be made to program public facilities at the earliest possible time. Sewer and transportation facilities should also be provided concurrently. This relates particularly to a quadrant formed by Maryland Route 355, the Eastern Arterial, Middlebrook Road extended, and M-61. This quadrant should be placed in Stage Two. It is the intention of the Master Plan that the timing of this quadrant be governed by the availability of adequate service from the Eastern Arterial and Maryland Route 355. Consequently, the point in time that this area should be scheduled for sewer service in the Comprehensive Ten-Year Water and Sewerage Plan should be adjusted so that development will be possible at the time transportation and sewer services are concurrently available. Thus, when the time for the construction of the Eastern Arterial has been determined or capacity is found to exist on Maryland Route 355, the Comprehensive Ten-Year Water and Sewerage Plan should be adjusted to provide sewer service at that time. Exhibit 24, a Proposed Amendment to the Ten-Year Sewerage Plan, depicts this area in the three-to-six-year period for sewer service, Category 11-B.

Similarly, the Staging Plan for the Germantown area must recognize the existence of an already approved subdivision in the Kingsview Village. This area, therefore, should also be designated for development in Stage Two; and the development should be contingent upon the application of adequate storm-water measures.

During Stage Two, construction for the village centers for Churchill and Middlebrook should be commenced and, possibly, the village center for Gunners Lake as well. Additional land may be developed to support the construction activities in Germantown. Some initial development in the central business district could also be included in Stage Two, but only on the basis of a comprehensive development plan, indicating the full extent and schedule of development. Rezoning for the central business district should be effected in a manner that will assure the integrity of this core area and will avoid the development of premature, non-center uses that should appropriately be located in village centers or other sectors of less intense development (see Section 3.62). Highway-related commercial activities in the town center should commence in conformance with the guidelines set forth in Section 3.61. Industrial development in Germantown should be expected to expand during this stage to accommodate about 10,000 employees. If this volume of employment occurs, the staggering of work hours may be necessary to ease peak-hour traffic at Maryland Route 118 and I-70-S.

The volume of private construction in this stage will require that the programming of roads keep pace with development. The second stage is predicated upon the construction of relocated Maryland Route 118 as a four-lane facility from Maryland Route 355 to Clopper Road, the widening of Maryland Route 355 to four lanes from Montgomery Village Avenue to relocated Maryland Route 118, the widening of Clopper Road to four lanes from relocated Maryland Route 118 south to Maryland Route 124, the widening of Middlebrook Road to four lanes from Maryland Route 355 to Maryland Route 118, the extension of Middlebrook Road from Maryland Route 355 to the Eastern Arterial, and the construction of the Eastern Arterial as a six-lane facility from Montgomery Village Avenue to Middlebrook Road extended. These projects should be placed in the Capital Improvements Program and/or the Maryland State Department of Transportation five-year construction program for development concurrently with the commencement of the second stage of private development.

"The Fifth Annual Growth Policy Report has identified that there are 5500 dwelling units with sewer allocations in the portion of Germantown west of I-270 and a remaining capacity in the road network for only 3000 more dwelling units. Thus no additional lots should be recorded in that area until the capacity of the highway network has been expanded. The County Council has accelerated the programming of the Western Arterial (M-90) called the Great Seneca Highway. This is a necessary improvement; however by itself, it is not sufficient. That portion of Maryland Route 118 between Middlebrook Road and Aircraft Drive must also be improved.



**Comprehensive Amendment
to the Master Plan
for Germantown**

Montgomery County, Maryland

**A Development
Sequence Plan**

9/79

• • • • Planning Area
— Major Proposed Roads

- 1 Stage One
- 2 Stage Two
- 3 Stage Three
- 4 Stage Four

"To facilitate the timely construction of this portion of Maryland Route 118 the Montgomery County Council may establish a Public Improvement District in that portion of Germantown west of I-270. The Public Improvement District will be responsible for the construction of that portion of Maryland Route 118. The financing for the construction would come from fees collected at the time of building permit approval. The fees would be on a per-unit basis for residential development and on a per square foot basis for retail and office development.

"If the County Council does not establish a Public Improvement District and if the highway improvements are not programmed by the State by the time private development wishes to move ahead then an alternative approach is proposed. In such a situation, all subdivisions in that part of Germantown which apply for recordation subsequent to the approval and adoption of this amendment must first enter into a public works agreement for the widening to four lanes of that portion of Maryland Route 118 from Middlebrook Road to Aircraft Drive and the improvement of those two intersections. This requirement shall be a condition of the approval of any preliminary plan or the extension of the approval of any preliminary plan made subsequent to the approval and adoption of this amendment.

"Upon recording, the owner and all successors and assigns will be bound, by public improvement agreement, to construct the improvements. The agreement shall be in accordance with the requirements of the State, County and/or Municipal agency, whichever is applicable and the agreement shall be recorded in the land records of Montgomery County. This agreement shall not constitute the programming of the road improvement. Therefore, any subdivision in the portion of Germantown west of I-270 is subject to the requirement of entering into such an agreement prior to recordation even if another developer has previously signed a similar agreement. The requirement to enter into such an agreement shall continue until the roadway improvements are completed by private funds or until 50% (fifty percent) of the construction funds for the improvements are contained in the 5-year State Secondary Highway Improvement Program or in the 6-year County Capital Improvements Program."

STAGE THREE

The third stage of Germantown development depends upon detailed study and decisions and will open the remaining sections of the first three villages to development. It will also open the sections of Clopper Village which can be properly served by public facilities.

The areas to be opened within Stage Three will be dependent upon specific major transportation facilities being programmed for construction and the programmed extension of sewer service areas. While zoning for Stage Three may occur fairly early, under the Adequate Public Facilities Ordinance, subdivision development cannot commence until major additions to provide traffic accessibility and sewer service have been programmed. Thus, subdivision approval cannot be granted for those areas in Stage Three until the improvements necessary for their support have been programmed. The timing for the programming of the necessary facilities should be reviewed as the time approaches to commence Stage Three and annually thereafter, in regard to the pace of development during Stages One and Two.

There are three major transportation facilities which relate to this phase: (1) the Eastern Arterial, (2) the Western Arterial, and (3) the additional interchanges on I-70-S (see Section 3.2). The areas encompassed in the sectional map amendment process recommended for Stage Three should relate to the transportation facility to be provided.

The aggregate potential number of new units in Stage Three is 4,700. The land in Stage Three is currently held in 42 separate ownerships.

Major development in the central business district, as well as the development of village centers in Gunners Lake Village if not already under way and in Clopper Village, is expected to take place during Stage Three. This stage can also be expected to produce major highway-oriented uses in the areas designated for them in the Land Use Plan.

Subject only to sewer service and storm-water management constraints, all remaining land indicated for industrial development on the Land Use Plan should be included in the sectional map amendment for Stage Three; and development should be authorized.

SUBSEQUENT STAGES

The subsequent stages of development depend primarily upon major sewer service extensions, in terms of trunk lines and pumping stations. They are also dependent upon the provision of additional storm-water management facilities. Comprehensive rezoning in the form of sectional map amendments will be undertaken, as necessary in response to the construction of such facilities. During these final "build-out" stages, 10,000 additional dwelling units will be developed, as well as the two additional village centers and completion of the town center and central business district.

NORTH BETHESDA SECTOR PLAN-GROSVENOR

Adopted May 1978
(Starting on Page 76)

STAGING

As discussed under Land Use Plan, two alternative land use plans are proposed, particularly affecting the areas adjacent to the METRO station. The alternatives are based upon the potential air-rights development over the METRO facilities. The staging of development at the station should also be based on retaining the option for air-rights development for at least several-years. If air rights are acquired on parcel 2, then Land Use Plan "A" will remain effective. If, however, air rights have not been conveyed within two years of the Grosvenor METRO station's becoming operational, then Land Use Plan "B" would be deemed effective. The Planning Board may, however, extend this time by an additional twelve months provided evidence is submitted that negotiations regarding air rights are about to be concluded.

The staging of development should be reflected in any rezoning application. The recommended Transit Station-Residential (TS-R) Zone requires a staging plan to be submitted with a rezoning application. It is recommended that the increment of development that would be permitted on parcels 3 and 4, if Land Use Plan "B" became operational, be indicated on the rezoning application as the final stage of development. That final stage of development would be authorized only upon a finding by the Planning Board that Alternative "B" is the operative plan. In this way, both the county and the applicant would not have to go through the rezoning process again if Land Use Plan "B" were operational, and yet the ultimate development scale of the parcels would be limited by disallowing the final stage if air-rights development becomes a reality.

Careful consideration should also be given at time of zoning to staging the development of properties to ensure that development is coincident with the provision of METRO and new proposed streets. This will ensure that new development can take full advantage of its proximity to METRO. Protection from over development can also be provided through the development review process at time of application for rezoning to either the Planned Development or Transit Station zones, wherein a finding of adequacy of public facilities must be made as a prerequisite for rezoning. This provision ensures that public facilities exist of sufficient capacity to accommodate the development proposed in the rezoning. Or it may provide for the staging of development to coincide with the provision of those public facilities.

NORTH BETHESDA SECTOR PLAN-NICHOLSON LANE
Adopted May 1978
(Starting Page 127)

STAGING

As previously discussed, two alternative land use plans are proposed for the transit station core, based upon the potential of air-rights development over the eastern METRO facilities. The staging of these two alternatives should be based on the operation of the Nicholson Lane METRO station. If air rights are acquired on the parcel designated as METRO East, then Development Alternative "A" is effective; if, however, air rights are not acquired within two years of the Nicholson Lane METRO station's becoming operational, then Development Alternative "B" would be deemed effective. The Planning Board may, however, extend this time by an additional twelve months, provided evidence is submitted that negotiations regarding air rights are about to be concluded.

This can be reflected in any rezoning application to the recommended TS-M Zone through a staging plan which is a required part of the rezoning submission. It is recommended that the increment of development, which would be permitted on the adjacent parcels if Development Alternative "B" becomes operative, be listed on the staging plan as the final stage of development. Of course, this would also require other qualifiers to be added to the rezoning, especially the implementation of Development Alternative "B". Thus, neither the applicant nor the county would have to go through the expense or time involved with the rezoning process again, the development can be controlled whether or not air rights are acquired.

Careful consideration should be given at time of zoning to staging the development of properties in the transit station zones to ensure that development is coincident with the provision of METRO and new proposed streets. This will ensure that new development does not overburden the public facilities in the area, and the new development can take full advantage of their proximity to METRO. Protection from over development can also be provided through the development review process at the time of application for rezoning, wherein a finding of adequacy of public facilities must be made as a requisite for rezoning. This provision ensures that public facilities of sufficient capacity will be available to accommodate the development proposed. It may also provide for the staging of development to coincide with the provision of those public facilities.

OLNEY MASTER PLAN
Adopted June 1980
(Starting on Page 125)

IMPLEMENTATION

This chapter describes policies and programs which should be taken to implement the Olney Master Plan.

STAGING RECOMMENDATIONS¹

The Fifth Annual Growth Policy Report of the Montgomery County Planning Board proposes a County-wide staging policy. The staging program for Olney consists of two stages:

STAGE ONE is keyed to the present carrying capacity of Georgia Avenue. Until widened, this major access road to Olney can only absorb traffic from another 1,700 homes.

STAGE TWO will begin when Georgia Avenue is programmed for widening to 4 lanes from Norbeck Road to Maryland Route 108 (the project is in the final design stage). This improvement will accommodate all future growth projected for Olney (5,000 dwellings).

The Olney Master Plan supports these staging policies as follows:

The first stage of development in Greater Olney will be limited to the capacity of Georgia Avenue. Stage Two development will commence when improvements from Norbeck Road to Route 108 are placed in the State Highway program for construction.

All subdivisions in the Georgia Avenue corridor south of Brookeville will be counted toward the capacity of Georgia Avenue. However, development in the rural area north of Brookeville will not be affected by the limited capacity of Georgia Avenue because densities are too low and the traffic distribution pattern too scattered to significantly affect highway traffic volumes.

Once the widening of Georgia Avenue is funded by the State Highway Administration's Five Year Construction Program, additional growth can occur since the Planning Board, in administering the Adequate Public Facilities Ordinance, must recognize the capacity of projects slated for construction within a six-year period.

This Plan supports the recommendations of the Fifth Annual Growth Policy Report that the APF ordinance be amended to require that a project be at least 50 percent funded in order to be considered an adequate facility. This requirement would allow better coordination of private growth and public facilities.

¹ These recommendations are consistent with the Planning Board's 5th Annual Growth Policy Report.

Two major public facility systems—Sewerage and Transportation—will determine the staging of development in the northeast quadrant of the Town Center.

To facilitate development in the Town Center, it will be necessary to amend the Comprehensive Water Supply and Sewerage Systems Plan map. A portion of the northeast quadrant is presently in Category S-5 which means services are not planned for 7 to 10 years. The Olney Master Plan recommends that sewer services be provided as soon as market demand exists for proper development and utilization.

Over the entire development, the timing of major transportation system improvements is crucial. Georgia Avenue must be widened and Prince Philip Drive completed to Georgia Avenue before development of the Town Center can be fully realized. The final segment of Prince Philip Drive will be a costly road partly because of a ravine which must be spanned near Georgia Avenue. To assure timely completion of the road, which is needed to service TDR receiving zones as well as the Town Center, County participation in the construction process may be necessary.

As the Town Center and receiving zones near completion, the level of service along Route 108 and between Dr. Bird Road and Bowie Mill Road may decline. Traffic levels along Route 108 will be monitored and the necessary right-of-ways for the road will be dedicated at time of subdivision to help assure timely completion of improvements when and if they are needed.

A summary of the Plan's staging recommendations is contained in Table 15.

TABLE 15

**OLNEY MASTER PLAN
STAGING RECOMMENDATIONS**

STAGE ONE		STAGE TWO
Proposed Growth	1,700 homes	3,300 homes
Key Land Use Use Policies	<ul style="list-style-type: none"> - Encourage residential infill in existing sewer envelope. - Begin construction of Town Center. - Implement TDR Program. 	<ul style="list-style-type: none"> - Continue implementation of TDR Program and Town Center concept.
Key Community Facilities	<ul style="list-style-type: none"> - Completion of Georgia Avenue/Route 108 intersection. - Completion of Georgia Avenue/Norbeck Road intersection. - Completion of Briars and Queen Elizabeth Roads. - Construction of Olney library. - Expansion of Longwood Recreation Center. - Construction of priority bikeway paths. 	<ul style="list-style-type: none"> - Georgia Avenue widened from Norbeck to Town Center. - Additional sewage pumping capacity in N.E. quadrant of Town Center. - Opening of Glenmont Metro line.
GEORGIA AVENUE WIDENING FUNDED		

POTOMAC MASTER PLAN
Adopted May 1980
(Starting Page 143)

STAGING PROGRAM

The implementation and staging recommendations contained in the Plan are based on the following factors:

1. The major roads which serve the Subregion have limited transportation capacity at present.
2. Sewage treatment capacity to serve the Subregion is a primary limiting factor within the master plan period (0-10 years).
3. The only realistically available staging mechanisms are the provision of sewer service and the improvement of street capacity.
4. It is County policy to provide "moderately priced dwelling units" (MPDU's) in the Subregion, as well as in all other areas of the County which are zoned for half acre or more dense zoning. However, MPDU's are not required in areas which are not within the ten year water and sewer envelope.
5. Much of the area currently zoned RE-2 can be developed on septic and well systems at densities comparable to or only slightly reduced from the two acre zoning standard.

Based on the above, the Plan recommends that the highest priority for development be granted in those areas recommended for R-200 zoning. If the R-200 areas are inhibited from development because of a lack of sewer allocations, the areawide general transportation capacity that is currently available will eventually be used up by other development which would occur in the RE-2 (Residential Estate - 2 acre) zoned areas. Eventually, the following adverse conditions would result:

1. Few, if any, MPDU's will be constructed in the Subregion until sewer capacity becomes generally available and additional transportation capacity is provided. Since the deficiency of transportation capacity occurs primarily on State highways, such as River Road and Route 28, the implementation of County housing policy in the Potomac Subregion depends indirectly on the State's ability to finance new highway construction.
2. The number of vehicle miles of travel for all trip making purposes increases.
3. Continued dispersion of potential elementary and secondary students will increase the length of school bus trips.
4. Development of the two acre areas on septic systems can result in development patterns which are not ecologically sound or environmentally sensitive in terms of preserving unique natural features and open space.

By encouraging early development of the R-200 areas by making sewage treatment capacity available, the new growth will be better matched to the available transportation capacity. Later occurring, low-density sprawl-type development could then be retarded through the use of the adequate public facilities ordinance if improvements to road capacity are not made. Under the County's Adequate Public Facility Ordinance, when the available transportation capacity has been exhausted, additional subdivisions which can be shown to overtax the highway network, whether on sewer or septic, cannot be approved until additional highway capacity becomes available. First priority for sewer service (Category 1-3) should be given to areas within the R-200 zoning category.

The approximately 5,280 acres of undeveloped land in the R-200 classification could produce a maximum of 12,672 new dwelling units if allowed to develop and the density bonus for MPDU's is applied.

The second and third priority areas to receive sewer service, respectively, should be the Rock Run Drainage Basin and those two-acre areas between River Road and the Potomac River. The Plan recommends that these areas be placed in sewer and water service category five. This places these areas within the sewer envelope but at the end of the 7 to 10 year period.

The final stage for the expansion of the sewer envelope would be those two-acre areas which can logically and economically be served by extensions from, or which can tie in with the transmission system as extended during the previous stages. Since there are no programmed dates for the provision of additional treatment capacity, it is impossible at this time to recommend dates for the beginning of each stage. With the exception of the Stage I recommendations, which would begin immediately, the other two stages must be tied to the provision of sewage treatment capacity and highway capacity. Depending upon how additional capacity is provided some refinements of the staging elements may be desirable in future years, but within the general policies recommended above.

The Plan does not contemplate extension of sewer and/or water to all of the areas recommended for two acre (RE-2) zoning, particularly those two-acre areas immediately adjacent to the Rural Zone areas. If the transmission system extensions to serve a given area cannot be constructed economically, then that area should be allowed to develop on well and septic systems.

ROCK CREEK MASTER PLAN

**Adopted October 1968
(Starting on Page 45)**

Sanitary Sewers--Sanitary sewers, eventually, will be needed to serve the planning area. This will be absolutely necessary in all density-controlled development if the "cluster" regulations continue to require access to sanitary sewers as a prerequisite for this type of development.

A reasonable modification to the present controls would be to allow utilization of individual septic systems in cluster development as now permitted in connection with conventional subdivision design, as set forth in Section 104-16(c) of the existing Subdivision Ordinance. This would permit, in varying degree, some reduction in total lot size in the Agricultural Residential and Residential Estate Zones, while maintaining the overall density required.

This flexibility in the regulations would be particularly helpful to the developer building a small number of homes. It also would permit development to proceed under a modified form of density control prior to the advent of sewers.

Flexible regulations in respect to the use of septic tanks would not be applicable to cluster development in the Rural Residential Zone. Here, access to sanitary sewers would be required, because lot sizes may be reduced to 10,000 square feet in a cluster plan, and this size lot is not acceptable for septic tank use.

Public schools required to serve the community also will need sanitary sewers. Thus, it will be necessary to provide sanitary sewerage to serve the planning area. It is recommended that these be designated as controlled-access sewers in order to assure that development occurs in conformance with the plan.

SANDY SPRING/ASHTON SPECIAL STUDY AREA

Adopted November 1980
(Starting on Page 83)

Water and Sewer Service Recommendations

Proposed changes to the Montgomery County Comprehensive Water Supply and Sewerage Systems Plan are shown on the Proposed Water and Sewer Plan map.

The Plan:

1. Recommends providing public water and sewer service to portions of Sandy Spring and Ashton planned for commercial and medium-density residential uses.
2. Continues limited access sewer policies in the area between Ednor Road and Maryland Route 108.
3. Recommends the overall support of the following County rural sanitation policies for areas designated for low-density residential development:
 - Public water and sewer in rural areas should be discouraged except in cases where public health hazards have been clearly documented by the County.
 - Both sewer and water service should be provided simultaneously whenever possible.
4. Supports a small extension of public sewer and water to allow the clustering of homes away from historic structures along Meeting House Road. The overall density would be consistent with the Master Plan.
5. Endorses the County's Office of Environmental and Energy Planning (OEEP) efforts in developing a Rural Sanitation Plan which will provide a framework for the solution of rural sanitation problems. The OEEP has conducted a sanitary survey of Sandy Spring to document the existing health problems and cost-effective ways of dealing with the problems. Solutions could include new wells and/or septic systems, possible use of mound systems, an alternative system or some pumping facilities.

SHADY GROVE SECTOR PLAN

Adopted April 1977
(Starting on Page 134)

10.2 IMPLEMENTATION PROCEDURES AND STAGING

Staging of development in Shady Grove should take place during three time periods: short range (next 2-3 years), middle range (3-8 years), and long range (beyond 8 years). In the short range time frame the staging of public facilities is tied to the opening of the Metro station. Capital improvements are required to provide access and sewerage service to Metro. In the middle range time frame, private development is tied to the construction of Crabb's Branch sewer and the provision of sewerage for this subwatershed.

Although sewerage service will be provided during the middle range time frame the entire sector plan area should not be developed during this period. The King farm, the large expanse of property proposed for Industrial Park (I-3) zoning (planning analysis area 28, see Figure 28), should not develop until sufficient transportation facilities are in place. Thus, during the short and middle range time frames the King farm is proposed to be kept in the present R-200, residential zone. When the transportation facilities outlined below are in place, rezoning to I-3 would be appropriate if all other appropriate planning criteria are met.

The staging mechanisms available to the County, i.e., the Capital Improvement Program, sewer service categories, and sectional map amendment, should be modified to implement the staging recommendations of this Plan.

SILVER SPRING SECTOR PLAN

Adopted July 1975
(Starting on Page 105)

STAGING

In order to maximize the METRO Orientation and focus of the Central Business District, this Plan proposes that, to the extent possible, new development be encouraged to center first upon the METRO station—particularly and relatively undeveloped parcels east of the B & O R.R. tracks. This suggests that impetus be given to undertake new development on parcels close to the METRO facilities on Second and Wayne Avenues, and on Bonifant Street. Similarly, early development in the area between Cameron Street and Colesville Road should also be encouraged. In addition to parcels on the east side, the Loving tract could be permitted to develop during this first or interim stage.

Accordingly, this plan proposes that any interim sewer capacity available for Silver Spring recognize that these areas should receive first priority for service.

Secondarily, in response to proposed public investment in a first pedestrian way link between the METRO station and the east side of Georgia Avenue, development of the Civic Center area should be undertaken.

New construction in other areas is not meant to be precluded by this orientation; however, proposed development projects in other parts of the Sector Plan area should be looked at carefully in terms of their relation to both public improvements and to the development of the central core, which must have first priority to give Silver Spring an attractive and viable future.

After construction of the Advanced Wastewater Treatment Plant, making sewer service generally available throughout the County, a second stage for development in Silver Spring will begin.

The Falkland tracts, due to their size and the importance of an integrated development plan and schedule for them, should not develop until this second stage is reached, but, in any event, not before 1980.

SILVER SPRING EAST MASTER PLAN

Adopted March 1977

(Starting on Page 76)

Water Quality/Sewerage System

While water quality of the Anacostia River tributaries is generally considered good, above-average, mean bacteriological densities and evidence of decal coliform pollution have been registered in all three streams at various times. The condition of some parts of the gravity sewer systems, which are old and have experienced leakage, are believed to have polluted the area's natural waterways. Periodic surcharging (overflow) occurs due to leakage of storm water into the sewer system during heavy storms. The completion of scheduled relief sewer projects should improve overall water quality. The projects at Long Branch and Northwest Branch are nearly complete and the Sligo Relief and Silver Spring Avenue Replacement Sewer projects will be constructed during 1977 and 1978.

In an attempt to continue to upgrade water quality, the following actions are recommended:

- Sources of stream pollution within the area and corrective action to improve water quality should be accurately determined by the DEP and WSSC; and
- Reports of the water quality of stream valleys should be published periodically.

To improve the conditions relating to sewerage systems, the following actions are recommended:

- Planning and construction of sewers should be sufficiently long range and coordinated with appropriate agencies, so as to minimize disruption to parkland and adjacent private uses; and
- The M-NCPPC and WSSC should continue to notify all adjoining and interested citizen's associations of sewer replacement or expansion, or any other utility work that may have a community impact.

TAKOMA PARK SECTOR PLAN

Adopted 1974

(Starting Page 58)

Stage II - 1979-1984

End of Sewer Moratorium

- Lifting of the sewer moratorium in the Anacostia Drainage Basin should allow new development to occur in Montgomery County.

Potential Development

- Mixed-use development should occur in the Carroll Avenue-Laurel Avenue shopping area, including provision of such desirable features as a variety of retail uses on street frontage, an open space relationship to the urban park at Westmoreland Avenue, and a pedestrian corridor past the Seventh Day Adventist Church to the Metro Station.
- Development may occur in the portion of the District of Columbia along Carroll Avenue and adjacent to Cedar Street.

Adequacy of Buffers

- Buffers between residential areas and the Metro station site or business areas should be evaluated; and improvements should be made, if necessary.

Neighborhood Maintenance

- Progress of neighborhood maintenance in the low-density residential area south and west of Tulip Avenue and in the other residential areas within the Metro station impact area should be assessed.

Stage III - 1984-1994

Potential Development

- Given that the necessary land assemblage occurs, and that such development is still compatible to the area, the redevelopment indicated as suitable for townhouses may possibly take place.
- Remaining land in the shopping area should now develop, preferably in a mixture of uses (under TS-M zoning)--particularly the land on the north side of Carroll Avenue in the Montgomery County portion of the Takoma Park business district.

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